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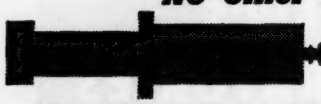

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The Beattie-Smith Lectures.[1]

(UNIVERSITY OF MELBOURNE.)

LECTURE I: THE SOCIAL ACTIVITIES IN MENTAL HOSPITAL TREATMENT.

By E. CUNNINGHAM DAX,

Chairman, Mental Hygiene Authority of Victoria.

I AM honoured to be invited by the Council of the University of Melbourne to deliver the Beattie-Smith Lectures for 1954.

Dr. Beattie-Smith came from Scotland and was appointed to the Mental Hospital, Ararat, as a junior medical officer in 1882, fifteen years after the hospital had been opened, and later he spent a further ten years there as the medical superintendent. In 1899 he transferred to the Mental Hospital, Kew, where he remained in charge until he left the department. Some idea as to the conditions prevailing at the turn of the century after the depression of the 1890's are to be obtained from Dr. Ernest Jones's lectures given in 1938. Dr. Beattie-Smith must have been in the department during some of the most difficult years of its history. It seems clear that political interference, intrigue, drunkenness and lack of discipline were everyday occurrences, and the conditions under which many of the patients were treated were appalling, despite a series of ineffectual royal commissions and select committees of inquiry. It is to Dr. Beattie-Smith's credit that he should have pioneered the teaching of both nursing staff and medical students through these bad years, should have resigned on a matter of principle involving the discipline of the department, and should have endowed these lectures in the hope of reform from the conditions which prevailed.

To read of the state of the hospitals then makes one realize how much progress must have been made under Dr. Ernest Jones's direction, and this must have a salutary effect on any of us who may delude ourselves as to the magnitude of our own undertaking in this field.

Incidentally, on February 14, 1955, it will be fifty years since Dr. Jones's arrival, and I hope that this event in the history of Australian psychiatry will be suitably recognized.

The choice of my present subject, which deals with mental hospital organization and treatment, follows closely the terms of the bequest, since much of my own experience has been in the mental hospital field. At the same time I hope it will extend a section of the theme of social psychiatry followed by Dr. R. Stewart Kennedy's lectures in 1953.

[1] Delivered at Melbourne on September 22 and 29, 1954.

The pyramidal solidity of the mental hospital organization has its three sides—medical, nursing and administrative—firmly cemented by years of rigid tradition. With each of its staff members fitted like stones into its steps, it becomes a formidable edifice to assail. To understand the solidity of this organization the history must be followed, for it is only just over a hundred years ago since the mentally ill were mostly kept in gaol in Collins Street (though it is not clear at which end they resided). The prisoners looking after the mentally ill had their sentences reduced in Victoria; but in England at the same time inmates were given gin for performing similar tasks, as shown by the Shaftsbury report. The first mental hospitals were ill staffed; the medical, administrative, nursing and artisan supervision largely fell on the shoulders of the superintendent, who had few senior officers to support him, though at one hospital it was reported that the medical superintendent used to meet his clerk in the brewery each morning to inquire into the business of the institution. The hospital controlled its staff completely, the salaries were low and the hours long, and there was little independence of existence. A few years before the beginning of the 1914 war a head attendant asked permission of a visiting committee to marry; a note was made in red ink beside the entry: "Permission refused!" This sort of organization, but in a diminishing degree, has been partly perpetuated, and the result has always been a somewhat strict hierarchy in which the patients unfortunately enough have ranked as the lowest strata.

The relationship with the penal system has never been broken, legal supervision aims at custody instead of treatment, and the public tends to regard the mental hospital patient as a social menace rather than as a sick person. It is little wonder that the disciplinary attitude of the gaols sometimes persists among the staff, and in fact to be "a good disciplinarian" has been the highest pinnacle of their training. In such a system the patients are marshalled and herded from place to place, counted like sheep, subjected to communal bathing and dressed in institutional uniforms. Similarly, when there is overcrowding the working patients still continue to clean the wards, with the remainder locked away or put outside to spend a miserable existence lying on the ground or walking up and down the ward gardens. It is little wonder that a dementia akin to a physical disuse atrophy was common amongst the unemployed psychotic patients.

If the status of the mental hospital staffs has been low, that of the patients has been lower still, and the prejudice amongst the public and in the medical profession has been reflected within the hospitals. I well remember an incident which did more to break this down in a few weeks than was otherwise possible in years.

Early in the war a deputy charge nurse became deeply depressed and feared he would kill his wife and child. After six weeks in a neurosis centre he was recommended for mental hospital treatment, which was arranged for him; but he refused, saying that if he went anywhere it would be to his own hospital. During his six weeks' further treatment, he joined with his fellow patients as a useful member of the social club and participated in all the occupational activities; he was discharged from hospital on a Saturday and returned to work in the hospital on the Monday.

This may not seem remarkable to many, but it had never been done before in the thirty years' history of the hospital, and I have rarely heard of it elsewhere. This man's courage established the possibility of treating the members of the staff and their wives in their own hospital, of their being visited by their colleagues in a normal way, and of one-time patients being employed on the staff without difficulties arising.

Criticism of the mental hospital system is easy enough; but it can only increase fear and prejudice unless it is used as a constructive means of demonstrating what is still to be done, and for the purpose of engaging public support to raise the status of the hospitals. To reduce any section of the community to a position of inferiority will accentuate the undesirable features in its members' social relationships. The resocialization of the mental defective, of the "institutionalized" child from a broken home, of the delinquent, of the slum dweller, of the alcoholic, of the prostitute or of the criminal must be directed towards restoring them to a place in a community in which they need no longer feel inferior or display anti-social tendencies.

Similarly, the position of both the patients and the nursing staff of the mental hospitals can be altered only by a change in the public attitude towards them. There must also be a wider spread of knowledge of mental illness and its treatment. But this change in attitude is hardly possible unless full nursing and medical requirements are provided in the hospitals, together with adequate accommodation for the patients and facilities for their social and cultural needs. Even under the handicaps associated with the rejection of mental illness much good has come of the psychiatric services, and in history I hope we shall recognize the achievements of the staffs, despite their adversities. It would be foolish to try to cast aside the skills gained in years of practical experience. If these have been acquired without nursing facilities, how much more can result from better conditions in which the training is reorganized along more practical lines?

Ward management is traditional and has been learned in the hard school of practical experience. No one can fail to be impressed by seeing a nurse collect a ward of restless patients to a meal or to sing together round a piano. Within a few weeks I have seen a good nurse transform a disturbed and unemployed ward into a contented and largely occupied group, or another organize the poorly employed patients in a ward to produce large quantities of wireless parts under stress of war. It is fascinating, too, to observe such a nurse's anticipation of impending trouble in a ward of epileptics and the breaking up of conspiring parties without friction. Even the varied, ill-assorted and overcrowded patients in the mental hospitals are skilfully managed, and the staff show an extraordinary ability to understand a complicated group relationship. It is not recognized or taught that the greatest skills of the psychiatric nurses lie in their prediction of human behaviour, in group management and in observation. More attention should be paid to these matters in the nursing syllabus and in their training.

I have tried to show that modern treatment has had to be built on the old foundations of rigidity, custody, overcrowding, poor facilities, prejudice and inferiority, but that, despite these handicaps, a high standard of ward management is maintained by the staff. The individuals in this structure have had to cling together and resist change by reason of their own insecurity in this ill-knit organization. It would seem that a clarification and modification of the principles of treatment and the aims and objects of the hospitals are long overdue. Hospitals are "purpose organizations", in which the end results should be foreseen and the means of achieving them predetermined. For this "purpose organization" the outcome of treatment must be appreciated by everyone working within the hospital; but it failed in the past because a labour-saving routine was evolved, which avoided criticism and trouble for the staff, and from which change was resisted.

Perhaps the usefulness and objects of treatment have not been sufficiently emphasized to the staffs of the hospitals. Psychotherapy in its widest sense, and rehabilitation, in the form of occupational and recreational therapy, have been the fundamentals of mental hospital treatment for many years. However, greater changes than ever before have occurred in the twenty-five years in which the physical methods of treatment have been introduced. These therapeutic advances have relieved many patients of their illness and have allowed the hospital staffs to see the outcome of their work and given direction to their labours. At the same time the nurses' role in treatment has been clarified, their services have been valued as members of a team, and this has been a step toward the formation of the therapeutic community.

It is widely known that the hospitals are changing from custody to treatment; but their newer functions have still to be recognized. The mental hospital is no longer a place where patients are primarily detained for

the protection of the community, as the people in this category form only a small minority of the mental hospital numbers. Instead, the first reason for admission must be to promote the patient's early recovery, or if this is impossible, to aid his rehabilitation to normal life. Even if these objects fail, it is in most cases possible to provide for his useful occupation within a protected hospital community.

These objects presuppose more than a custodial organization; there should be a positive reason for a person's admission to hospital—something should be done towards his recovery or rehabilitation which is not possible if he remains at home. There is some confusion in the transition stage between the people who need hospital treatment for a definite disorder and the others who need care for the sake of themselves, their families or the community.

In seeking the solution we must think of the social relationships of the mentally ill prior to their admission to hospital. Their community and occupational contacts have sometimes been strained, and return to their previous life may therefore be difficult. Often there have been a sense of inferiority, a feeling of failure and even threats of self-destruction or aggression. Their family relationships have frequently been complicated and are in need of considerable reorganization.

When a patient is admitted to hospital for treatment, he has adjustments to make to the hospital life, and when he is discharged he still has his social problems to face. There would be no value in his in-patient treatment if it did not equip him to be able to fit in with his home environment. An added problem of his discharge arises through meeting the prejudices which still exist against anyone who has been in a mental hospital.

The mental hospital system must change if the patient is to be equipped to make these adjustments. So far he has been taught little more than to live in an artificial protected community and to conform to a routine. But he can become a member of a therapeutic community, which is set towards stimulating its members to help themselves towards recovery or rehabilitation.

The question arises as to how this reorganization of the mental hospital to a therapeutic community is best carried out in old buildings and with the staff and patients firmly set in their ways.

I was fortunate enough to have the opportunity of forming such a therapeutic community over some years, commencing under wartime conditions. If, at times, my account should sound dogmatic, it is because I have attempted to pick out, in as simple a way as possible, the steps by which the changes were made.

I am proposing for the remainder of this lecture to speak of the formation and functions of this community.

The first step in all such changes is to have the support of the staff, which can be gained only by informing them of the plans and their purpose. In this case, since the first step was to reclassify all the patients and their wards, everyone was intimately concerned with the alterations.

Classification.

If a hospital has its early treatment centre or receiving wards, they will be separately organized for special treatment, with their own social club. Similarly, the sick and geriatric wards make their own social activities, and preferably in conjoined units for males and females, with common recreation and dining rooms.

The remaining wards can be classified into a ladder system; the smaller their economic size, over, for example, 30 beds, the better will the scheme work. The wards can conveniently be grouped from A to E depending upon the freedom given and supervision needed. In this scheme A wards are the self-management wards, B wards where patients are on parole but need more supervision, C wards for those on accompanied parole whose movements are restricted, D wards for the persons in closed wards because of their resentment against detention or their delusions, and E wards for those needing close supervision because of their being very disturbed or in consequence of their severe regression or deterioration.

In this way there can be a graded system of social treatment, from the wards for habit training at the one end to those for the employed and fully adjusted at the other. Each patient must find his highest possible level, and in many cases this will be short of the best wards. One patient said that he was not going from a C to a B ward because they all changed their working coats in the evening there, and you had to feed in the same place as the female patients, and he "didn't like women anyway". It may be advisable to duplicate the A and B groups at an equal level, so that one lot of wards is kept for the farm, garden, boiler house or building workers, and another for those occupied in the offices, or in the printer's, carpenter's, upholsterer's or tailor's shop on the male side. In a corresponding division on the women's side, there are the female land army workers, the gardeners, the poultry farmers and stock keepers on the one hand, and the laundry, needlework, library, hairdressing, office and domestic workers on the other. It is as well to have a minimum number of closed wards, as the necessity then constantly arises to try a number of patients with a greater degree of freedom. Similarly, if few domestic workers attend the closed wards for disturbed or regressed patients, others will be trained to do the work of the ward, and this will be to everyone's benefit.

Such a stepladder reclassification is not easy, as it often means uprooting patients from wards where they have been for many years and arranging many changes for the staff. It has to be explained to the nurses that to be in charge of the disturbed or regressed patients is a compliment to their ability, and not a means of giving them unpleasant work to do. It has to be made equally clear that the nurse in sole charge of a ward of working patients, most of whom are out all day, has no less a responsibility than that of another looking after a hospital ward with eight staff and the work of a busy sick ward. This is because the lone nurse has the individual task of observing and acting upon the smallest changes in his patient's condition.

Incentives.

But the stepladder system requires more than classification; it also needs graded incentives to make the patients want to climb the ladder. This is, I believe, the second principle in social therapy. These incentives may be grouped under the following four headings: (*a*) physical amenities, (*b*) social incentives, (*c*) recreations, (*d*) available hospital services.

Physical Amenities.

Physical amenities comprise in the main the furnishings and clothing, the principle embodied being that in any renewal of furnishings, the A wards—those where the patients need least supervision and have the greatest freedom—have the first choice and that their furnishings move down the ladder to replace those which are not so good in other wards. Clearly, when a hospital is fully equipped, the A wards need different clothing and wardrobe accommodation from the wards for regressed or disturbed patients. For instance, their individual lockers will contain all the clothing and possessions which must be cared for by the nurses in the closed wards. Patients are encouraged to wear their own clothing; but that provided by the hospital should always be good enough to make a patient inconspicuous when it is worn outside. In the female wards particularly, the better the patient, the better the clothing, which should be marked with her name or number and mostly washed by the patient herself; but individual laundering can be arranged without great difficulty if the mental hospital laundry system is run on commercial lines. Central linen stores are of the greatest use for providing adequate quantities of well-kept linen and common clothing for the wards needing more supervision, and the nurses in charge of wards no longer need spend their time looking after stocks.

In regard to furniture, couches and chairs in tapestry may be suitable for some of the A and B wards, whereas plastic leather-cloth chairs are the only ones suitable for the D and E wards. Patients in the self-management wards will look after inner spring mattresses; hair and fibre mattresses (which can easily be remade) are more suitable for C and D wards, and plastic-covered rubber mattresses for the E patients who need frequent attention and for those who are destructive. The less disturbed the ward, the lighter the furniture will need to be, and the more can be done with decorations and fittings. The patients in the A and B wards will bathe and shave themselves without supervision, and when they wish, but closer care is required for other groups. As a general rule, the more responsible the patient, the smaller should be the numbers in the dormitory, the better the furnishings provided, the finer his clothing and the more adequate his accommodation.

Social Incentives.

Many differences can be made in the social incentives provided. The self-management A group patients must be given complete freedom within the code of regulations which they largely make for themselves, and these rules will cover where they go and when, their activities outside the hospital, their mixing with the opposite sex, their ward routine and the privacy they enjoy. These activities must obviously be restricted in other wards according to the amount of supervision needed. Similarly, more rules must be made for the care of the lower groups. Nevertheless, even amongst the very disturbed, inter-ward competitions and occasional visits between the male and female wards for tea parties are beneficial and can be enjoyed by most patients; they will help to keep up the appearance of both the patients and the wards, and raise the standard of living.

Amusements.

Mostly it will be found desirable to make two divisions in the amusements, the one for the A and B groups, and the other for the C, D and E groups, although in some hospitals the C or restricted parole group may be able to join the first division. In this way it is easier to arrange joint entertainments between the sexes, such as dances, play-acting, games, films, magazine production, lectures and concerts. Outdoor games should be organized as in schools, with the help of a games officer who looks after the equipment and can be responsible for the physical training classes. Bowls, tennis, putting, football, cricket, hockey, baseball and basketball should give plenty of opportunity for most patients to find some game they can play fairly well. A distinction between the groups will have to be made in many instances in the patients' gardens, which in the higher groups are kept by individuals and in the lower as community efforts. If the seeds and implements for individual garden plots are provided by the hospital, as I think they should be, it is important that the patients should have freedom to dispose of their produce, otherwise they cease to be interested in its production. It was found that the gardeners disposed of their wares in three ways, one popular method being by cooking what they had grown themselves and having ward meals in the evenings, supplemented by pies from the kiosk or "left-overs" from lunch or tea. Some prefer to give their flowers and vegetables to their visitors, and this has several therapeutic advantages. A third group manage to make a few shillings by selling the produce. One patient recently bought a plot from another for fifty shillings; one supposes that he makes a fair profit from his activities. Others have been enterprising enough to induce one or two less ambitious labourers to work for them.

A hospital horticultural show with classes for both patients and staff, competitions, exhibitions, stalls and amusements can be a great success and stimulates the gardening activities. These need not by any means be confined to the male patients. Inclusion of cooking competitions and prizes for table decorations, posies and bunches of wild flowers and foliage is a further stimulus to the female activities.

The male and female self-management groups can often go for excursions, hiking expeditions or visits to outside attractions together as part of their rehabilitation.

Hospital Services.

In such a scheme of incentives as this a joint cafeteria for males and females may be an excellent proposition. In the one of which I had experience, the tables were laid, the bread cut and buttered, the china and cutlery washed and checked, the room cleared, and the food served by female patients working on a roster and wearing uniform. This was amongst the most popular of the employments. The patients took their own meals, which were served from the hot plate onto trays. They sat where they pleased; some males and females preferred to sit apart, many mixed. They could come back for extra helpings and there was little waste. They cleared and piled their plates and emptied the scraps before leaving. The appearance and behaviour of all the patients were particularly good; but a rule had to be made for removing working overalls and washing before coming to meals.

A kiosk or shop can be opened to the parole patients at any time, but those from other wards should go at specified times, accompanied by the nurses to provide supervision over their purchases. There is something to be said for the token system of payment within mental hospitals; this is a sort of local coinage with which purchases can be made at the kiosk. A man who has earned £20 a week frequently feels insulted when offered a few shillings for his labours; but if his pay is a token to buy so much in the kiosk it may be better, and the other advantages are obvious. In the case of patients on full parole, tokens may, with permission, be cashed at the office if the money is required. All the patients who work should be given at least a small sum and be able to earn greater amounts on a sliding scale, according to their industry. The tokens should be based not so much on the value of the work as on the patients' industry, and understood by them to be an encouragement and token reward.

The library facilities have to be apportioned according to the ability of the patients to care for their books. It is perhaps preferable to run three library services, the first for groups A and B, a second modified service for those with less freedom and less opportunity for caring for the books so carefully, and a third service of expendable books and magazines which can be constantly replaced for the disturbed and regressed patients. The library should have a quiet reading and writing room adjacent, where male and female patients can read the books, and where writing materials are always available. The library produces excellent employment for a number of patients, as also do the hairdressing salons.

In the same way the hairdressing salons can always be open to the parole patients, the females booking their own appointments. For the patients on restricted parole special times are conveniently allotted, and those in the closed wards are best visited by the hairdressers and barbers.

It will be found that the A and B full parole groups will also have the advantage of free access to the chaplain, psychologist, social worker, occupational therapist, artist and occupation officer, and to the secretariat and the other departments, whenever the officers are free to see them. All patients, even if they are normally out of work, must also have regular access to their ward doctor and to the administrative nursing staff on request.

Every mental hospital should have its own chapel, which should be open for private devotion. It is as well to have the Sunday morning services for anyone who wishes to attend, and for evensong to be restricted to the staff and full parole patients. In the mental hospital the spiritual and a great deal of the cultural life can revolve round a well-used chapel. For this reason it is not a satisfactory arrangement for the chapel to be part of the recreation hall.

Some of these amenities can well be given to the sick and geriatric patients; but these must in part be dependent upon the facilities available to them in the wards and on the staffing and the means of distribution.

It is clear that an adequate classification of the patients into a stepladder system of wards will allow for an allocation of the physical, social and recreational amenities, and for the use of the hospital services according to the improvement in the patient's condition.

Thus the more responsible the patients become, the greater will be their privileges in the community. The obvious advantages to be gained through climbing the ladder lessen the chance of parole being broken or of the patients' getting into trouble. Lapses may mean that a patient has not as yet become well enough to accept the extra responsibility of the freer ward, and a step up the ladder is a difficult social adjustment to some. This is particularly the case in the full parole and particularly the self-management wards, where there is a good deal of outside activity associated with outside matches for indoor and outdoor games, visits to social clubs, and outings of various kinds. Such patients sometimes discuss their lapses with the group in the A wards, or with the doctor, particularly if they have only recently been moved, or if they do not appear to be so well. It may be that they will then need to return to their old ward or to resume their previous treatment.

It has been found in practice that such a scheme of incentives as this has a great effect on the standards of the hospital. The patients respond in their appearance, behaviour and trustworthiness. They form better personal contacts, appreciate the group activities, take an interest in the community, and are well employed. They know their position and can take stock of their progress in their social relationships. They see the opportunity for improvement, and they are constantly rewarded by their efforts to help themselves. There is a gain to the hospital and community, because of the incentive to production, since full parole and the privileges of the A and B groups are completely conditioned upon each of their members being usefully occupied.

But as so far discussed, the pattern has been only a modification of the old system, a means of giving a progressive reward of more freedom, more amiable companions and better amenities in return for cooperation, industry and trustworthiness. The organization that I am describing was evolved from wartime overcrowding and staff shortages, for on the morning shift 25 men were looking after 700 male patients, and in the afternoons sometimes the number of nurses on duty fell to 18. The proportion of the female staff was much the same, with about twice the number of patients. The cafeteria for 250 male and female patients in the entertainment hall was therefore often run with one member of the nursing staff, and sometimes without any, and was originally planned so that the ward dining rooms could be converted into dormitories. One male nurse at the time looked after the overcrowded male villas, holding in all 120 patients. This organization had proved so great a success under wartime difficulties that it was retained and expanded when the full staff came back; but their return gave the opportunity for more individual treatment when it was most needed, and for a considerable expansion of therapeutic requirements. This increase in staff also gave the opportunity for other changes to be made towards evolving a therapeutic community in which the patients took a far larger part in their own management.

Social Therapy.

The therapeutic community is a dynamic community. It is one in which the patients must make their own decisions, and play a part in the management of their wards. They must organize their recreations, accept their social responsibilities and become active members of a group. The classification of the wards and the incentives provided would require only a comparatively passive role in the social organization, were it not for these community activities. Much of the development of the therapeutic community has come from the work of Maxwell Jones, first in the effort syndrome units at Mill Hill Emergency Hospital, next from his work at Dartford with returned ex-prisoners of war, and in recent years in the Belmont Hospital for neuroses and the rehabilitation of those unemployed from this cause.

Maxwell Jones has moulded the unit into a therapeutic whole where all its activities are planned for this purpose, and each of the staff knows his role and the morale is extremely high. The patient derives much of his benefit by being absorbed into this community, so that he then will identify himself with a useful and productive purpose. Much attention is paid to the community meetings on social topics, psychodrama, films, and a meeting about the patients' likes and dislikes and requirements in the hospital. The evolution and work of the unit are described in Maxwell Jones's book on social psychiatry, first published two years ago.

The therapeutic organization of the mental hospital cannot be quite the same, as it is larger and more heterogeneous and is built on a set pattern which must gradually be modified. One of the first matters which must receive attention in the organization is that of communication. Both staff and patients must learn to talk more freely than before without the fear of losing their security. But initially I believe there must be full staff understanding as to the object of the rearrangement. The hospital must be administered by horizontal rather than by vertical communication, with a spreading and receiving of information rather than the issuing of orders. Meetings of the staff should be held at all levels, and the discussions should be mainly in the hands of the junior rather than the senior members in every case, though it is clear that the senior members must ultimately make decisions.

There should be free communication between the various grades of staff, and in dealing with therapeutic matters everyone concerned should have the opportunity of participating in the discussions. It is equally essential that all hospital workers—the clerical and artisan staffs, for example—should realize what is their part and how closely it is concerned with the patient's welfare. Bulletins, notice boards and magazines will reinforce the goals and give knowledge of the function of the staff. In this way they will acquire a single aim and a definite understanding of the ways of transmitting this aim to the patients.

A sympathetic staff will encourage the formation of patient social clubs and appreciate their therapeutic value. These in their turn will lead on to the more controversial issue of ward meetings and self-government.

Early in the war we had the good fortune to have an ex-vice-consul as a patient, who organized the new social club for the recent patients with considerable skill and diplomatic efficiency. At that time Bierer had just published his first paper on therapeutic social clubs from Runwell; but this in-patient club and the out-patient club which followed some time later grew up on rather different lines. They were formed in the first place for the patients to organize their cultural and recreational activities, and from these the general group organizations were evolved. In this context I must pay a tribute to Dr. Sybille Yates, who played a large part in the development of these forms of treatment from 1942 onwards.

Social club general meetings for patients belonging to A and B and perhaps C groups, or the restricted parole category, may well be held every three months. The chairman, secretary, assistant secretary, treasurer and committee are elected, but none for more than two terms of office in succession, so as to give a chance for as many as possible to take an active part in the management of the club. The committee may be formed from two members of each of the wards concerned elected at previous ward meetings, whilst it was found from experience that it was wise for the appropriate medical staff to consider the nominations for the chairman and secretary, in particular, or the club might be involved in serious difficulties.

On one occasion the elected chairman of one of the social clubs was an ex-matron of a large general hospital, though still in her thirties. She had been a drug addict, largely because of the disparity between her intellectual level (her I.Q. was over 150) and her emotional maturity. She had a flow of bright ideas, organizing capability and much enthusiasm. She organized a magnificent stage production,

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the scenery and costumes were almost finished and only the final rehearsals were to come, when the cast was left stranded to support the performance because of her inability to accept the final responsibility for its production. After the two performances, three of the cast relapsed, the producer showed severe hysterical symptoms and the club almost disintegrated.

Although most of the requirements are provided, it is well for the club to have a small weekly sum for competitions and prizes and a small subscription from time to time, as determined by the members, which can be deducted from the canteen tokens. Committee meetings are held weekly and taken very seriously. The agenda consists of arranging the next week's social programme, hearing suggestions from the ward representatives and doing the general business of the club. A member of the social worker staff and sometimes a ward sister attend by invitation as a useful link between the club and the hospital administration. Each ward has its social club notice board. Although the recreations are voluntary, group encouragement is such that most people join in at least a few of the weekly events. A weekly hospital time-table is circulated to all wards, giving the times of all the films, and the programmes for concerts, dances or plays which will supplement the social club programmes.

It is usual for each item of the week's programme to be arranged from the wards more or less in turn, and for one or two of the patients, who need not be on the committee, to be responsible for the evening's organization.

The week's programme is mainly conducted in the club room and recreation hall, but some of the items are held in one or other of the wards, either male or female. It is useful for all the wards to entertain the social club from time to time, as it gives the patients pride in their ward's appearance and in its management.

The total membership of a social club should not be more than 200 in all; after this the club should be duplicated, with such modifications as are needed for those unable to accept an equal degree of responsibility. It is desirable that adequate club room accommodation be provided; an army hut will do very well, particularly if it is large enough to provide table tennis and a space for dancing or games. A piano, a gramophone and a wireless are needed, and one end of the room can usefully have a curtain which can be used to close off a portion as a stage for play readings and concerts. Wash basins, toilets and a kitchenette should be near at hand if they cannot be included in the club rooms. It is valuable for patients to decorate the building themselves.

Besides the social club activities there are many jobs for which patients can be made personally responsible, and this should be encouraged, so that the patients are given a part to play in serving the community and a sense of contributing to the welfare of the group.

It is found that an excellent programme is often provided, well balanced and original. At other times the clubs seem to become sterile and formal, or on the other hand they may revolt and show a predilection for syncopation, inactivity, crooning and amorous intrigues, which are indications that the hospital management must look to the cause in the wards or administration.

A typical programme will often be selected from concerts, lectures, gramophone recitals, debates, discussions, play readings or group projects as the more serious activities. Amongst the lighter reliefs are various sorts of dances, indoor and outdoor games, variety concerts, the cinema and hiking. For a while one club took on some social projects mainly concerned with taking the aged patients for walks, giving them concerts and helping in their ward gardens.

At first, when the self-government extended no further than the social club, it was found to assume the function of a channel for collective communication from the patients to the staff. The general meetings which the medical and some other members of the staff always attended were opportunities for free discussion, and many matters were raised for consideration. On occasions group aggression appeared; on others an over-demanding member was suppressed by an otherwise contented meeting.

Sometimes there was a demand to know more about the hospital and the methods of treatment, and a series of information sessions were held by two doctors and a ward sister or a social worker. All sorts of questions would be posed and had to be frankly answered to the satisfaction of the meeting. For instance, one patient would ask: "What happens to me in an insulin coma?"; or "Is electrical treatment a cure and how does it work?" Another would express his fears by asking about leucotomy and the stories of changed personality. Some questions were rather more intimate—for example, why the staff hours were not staggered so that there were more on duty in the mornings and less around when they had nothing to do in the afternoons, or what was the value of the white coat to doctors without sick patients to examine. The food and menus had their share of criticism; but the catering officer and secretary were most cordially received when they expressed their willingness to talk matters over with the club.

At times a few male members would drink, and on occasion take the women with them. At others gambling would begin or members become too affectionate. Such matters were most satisfactorily dealt with by the group on the basis of the lowering of the group morale and lessening of its cohesion, and many of the problems could be eliminated without further steps being taken.

Weekly ward meetings are very useful. The charge nurse and other staff usually attend and the medical officer may be present. At these meetings the patients under their own chairman will discuss the ward business together and instruct their delegates to convey their wishes to the social club committee and to the representative council.

The ward meetings can solve many interpersonal problems. There may be a tendency to refer these matters to the sister or doctor for judgement; but they are best returned to the patients to discuss the solution, and particularly to analyse the reasons for any occurrence. This participation in the government of the ward, the expression of the patients' personal opinions and the sense of being members of a group, are factors which are of much benefit to many.

It has to be understood that these ward meetings, in the beginning at least, are difficult experiences for those sisters and charge nurses who have learned their ward management by its being handed down from the authoritarian school. They will have to be able to absorb much aggression and resentment which is displayed in the form of ward criticism. They must avoid mixing their own problems with those of the patients, and retain their role of transmitting the planned policy of hospital treatment whilst remaining detached in their emotions, but sympathetic in their understanding. The nurses' ability to be even-tempered, stimulating to the group and encouraging to the patients under their care will be of powerful assistance to the patients' self-expression and to the formation of a therapeutic community.

The social clubs and ward meetings are most suitable means of solving local difficulties and making group arrangements for the social and recreational activities of the hospital. They encourage their members to express their opinions, to assume responsibility and to work towards their own treatment by participating in a social group. In the past patients in hospital have been relieved of their responsibilities; now the position is being reversed and they are being taught to carry them.

There is still a gap in the communication between the ward meetings and social clubs on the one hand, and the hospital administration on the other. To establish a therapeutic community, ward meetings must be generally accepted and social clubs firmly established. But these supply the local requirements which in many cases can be easily satisfied, and perhaps do not give the patients enough say in the running of the hospitals. Maps of the hospital and its departments can be usefully distributed; both patients and relatives are given or sent a letter on arrival telling them about the hospital, and it is useful

for various members of the staff to meet the patients and tell them about their jobs. But it is also useful for the patients to know about the more major problems of organization and to be able to offer their suggestions and sometimes their assistance in these matters. A patients' representative council with two members from each ward is probably the best form of committee, though in a large and well classified hospital the representatives of such a council would be a very mixed community. Unfortunately I have no experience of such a council, as my work had to cease when this stage was reached.

When patients who have learned to take their part in such a community are discharged from hospital, they should be enabled to live more adequately in their home surroundings and to return to full employment. One hopes that these patients will have learned to discuss their difficulties more easily than before and to be able to face their cause. As a result of this reeducation they should, in the light of their social relationships, be more easily able to recall their symptoms and review their illnesses and to make plans for the future. By this time the patients will have discussed in their groups the public prejudices they must face; but they will know that they are diminishing and meet them with courage. At the same time they may be comforted by Swift's "Verses on the Death of Dr. Swift". It will be remembered that he left his estate of about £10,000 to form Saint Patrick's lunatic asylum in Dublin in 1745:

> He gave the little wealth he had
> To build a house for fools and mad;
> To shew, by one satiric touch,
> No nation wanted it so much.

Conclusion.

In my first lecture the development of the mental hospitals and their need for a purpose in their administration have been discussed. The latter is being supplied by their reorganization as therapeutic communities. I have described the way in which one such community was developed by classification, incentives and social therapy.

In my second lecture I hope to show that creative as well as social activities are necessary in the hospital reorganization to raise the standard of living and to break down the prejudices. The patients may use these means of self-expression as a very useful aid to the treatment of their disorders. But new types of mental hospitals must follow, to give full facilities for these approaches to psychiatric treatment and an economic outlook to the patients' occupations. Since the cultural as well as the social activities are concerned in the replanning of the mental hospital system, I have therefore postponed its discussion to the end of my second lecture.

MASS X-RAY SURVEY: CITY OF SYDNEY.

By CHARLES RUBINSTEIN,
Sydney.

A MASS chest X-ray survey was carried out in the City of Sydney by the Anti-Tuberculosis Association of New South Wales from April 30 to October 16, 1953. The City of Sydney is divided into ten wards, and the estimated population is 210,000 (census, 1948).

Each ward in turn was declared by the Government a "proclaimed area", it being made compulsory for all residents over the age of fourteen years to present themselves for a radiological examination of the chest. Persons who had had an X-ray examination within the previous twelve months were exempt.

In each of the wards four mobile units, consisting of specially designed trailer-type caravans fitted with 70-millimetre X-ray equipment, operated on five days a week from 9 a.m. to 9 p.m. continuously for a fortnight, except in Gipps Ward, where they remained for four weeks.

There were 101 working days, an average of 1900 X-ray films per day being taken by the four units.

The interpretation of miniature and large films, and the general procedure of following up patients and of their disposal were on similar lines to those as described in detail by Wunderly (1954). Data derived from this case-finding programme for tuberculosis—the largest of its kind ever attempted in Australia—were carefully analysed. All information collected from 192,297 persons radiologically examined was recorded by the punch method and sorted mechanically with respect to age, sex, country of birth, place of residence and previous X-ray examinations.

TABLE I.

X-Ray Status.	Males.	Females.	Total.
Previous X-ray examination ..	58,112	37,680	95,792
No previous X-ray examination	42,012	52,712	94,724
Not stated	947	834	1781

The general results of the survey may be set out as follows.

Number of persons radiologically examined on miniature film 192,297

Number of persons radiologically examined on large film 4048

Of these: (i) 910 had normal X-ray appearances; (ii) 352 (0·18%) were found to have active tuberculosis; (*a*) 329 of these cases were new, and (*b*) 23 were old; (iii) 1886 (0·97%) cases of inactive tuberculosis were found; (iv) 901 (0·42%) subjects were found to have non-tuberculous disease.

In Table I it will be seen that approximately 50% of the number of persons examined were radiologically examined for the first time.

There were 329 new active cases of pulmonary tuberculosis diagnosed in the course of the survey, and 23 active cases in which a history of previous tuberculosis was obtained. Most of the latter patients, whose tuberculosis was of long standing, were under the impression that their disease was no longer active, and failed to have a periodic X-ray examination.

TABLE II.

Material or Test.	Males.	Females.	Total.
Sputum:			
Direct smear, positive result	37	20	57
Concentrated deposit, positive result	76	17	93
Culture, positive result ..	116	35	151
Gastric contents: culture, positive result	9	17	26
Guinea-pig inoculation:			
Positive result	1	—	1
Negative result	1	—	1

In addition, 1886 cases were considered inactive; this number included 727 questionably active, in which by serial X-ray examination and negative results to bacteriological tests activity was excluded, and also 1159 cases in which were discovered fibro-calcific lesions consistent with a probably healed tuberculous process.

To give a more accurate picture of the prevalence of active pulmonary tuberculosis in apparently healthy persons, the statistical analysis is presented separately for new cases only.

All active cases were proven bacteriologically except one, in which the diagnosis was confirmed after resection.

The laboratory findings in the new active cases are set out in Table II.

Analysis of the extent of the disease in all new active cases of tuberculosis shows that only 140 cases (42%) were detected in the minimal stage.

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The incidence of new active cases of tuberculosis detected in the City of Sydney was the highest compared with subsequent mass X-ray surveys conducted under similar conditions in the year 1953-1954, as set out in

TABLE III.

Stage of Disease.	Males.	Females.	Total.
Minimal	93	47	140 (42%)
Moderately advanced ..	116	33	149 (46%)
Far advanced	31	9	40 (12%)
Total	240	89	329 (100%)

Table IV. Seventeen new active cases in every 10,000 persons radiologically examined were found in the City of Sydney, and only nine in 10,000 in the survey of the City of Parramatta.

A separate survey was conducted in each of the ten wards of the City of Sydney. The rate of new active cases

From Table VII it can be seen that only about 10% more males than females were radiologically examined, but that the incidence of new active cases of tuberculosis

TABLE IV.

Area Surveyed.	Total Number Radiologically Examined.	New Active Cases.
City of Sydney	192,297	329 (0·17%)
Municipality of Marrickville	52,916	62 (0·11%)
Municipality of Leichhardt	39,379	49 (0·12%)
Municipality of Canterbury	67,850	75 (0·11%)
City of Parramatta	66,758	62 (0·09%)
Municipalities of Kogarah, Rockdale and Hurstville	97,676	85 (0·08%)
Totals	516,876	662 (0·12%)

in males was over two and a half times higher than that in females. The outstanding result of the survey was the

TABLE V.

Number of Persons Radiologically Examined and Number of New Active Cases Detected in Each Ward: Males and Females.

Ward.	Males.		Females.		Totals.	
	Number Radiologically Examined.	Number of New Cases.	Number Radiologically Examined.	Number of New Cases.	Number Radiologically Examined.	Number of New Cases.
1. Flinders	7,466	25 (0·33%)	7,076	10 (0·14%)	14,542	35 (0·23%)
2. Paddington	7,068	18 (0·25%)	8,045	11 (0·13%)	15,113	29 (0·19%)
3. Redfern	9,775	31 (0·31%)	8,592	10 (0·11%)	18,367	41 (0·22%)
4. Alexandria	8,696	20 (0·23%)	7,773	9 (0·11%)	16,469	29 (0·17%)
5. Camperdown	9,795	26 (0·26%)	10,050	10 (0·09%)	19,845	36 (0·18%)
6. Glebe	7,625	18 (0·23%)	7,251	7 (0·09%)	14,876	25 (0·16%)
7. Phillip	6,564	19 (0·28%)	4,413	4 (0·09%)	10,977	23 (0·2%)
8. Fitzroy	7,587	16 (0·21%)	9,336	9 (0·09%)	16,923	25 (0·14%)
9. Macquarie	9,215	24 (0·26%)	6,204	5 (0·08%)	15,419	29 (0·18%)
10. Gipps	27,280	43 (0·15%)	22,486	14 (0·06%)	49,766	57 (0·11%)
Totals	101,071	240 (0·23%)	91,226	89 (0·09%)	192,297	329 (0·17%)

TABLE VI.

Subjects.	Males.		Females.		Total.	
	Number Radiologically Examined.	Number of New Cases.	Number Radiologically Examined.	Number of New Cases.	Number Radiologically Examined.	Number of New Cases.
Residents	55,633	174 (0·31%)	55,856	67 (0·11%)	111,489	242 (0·21%)
Non-residents	45,438	65 (0·14%)	35,370	22 (0·06%)	80,808	87 (0·1%)

was consistently higher amongst males in all wards. The highest incidence was found in Flinders Ward. The lowest incidence was in Gipps Ward, which had the highest proportion (85%) of non-residents attending for X-ray examination.

Legislation required that only residents of the City of Sydney over the age of fourteen years should attend for an X-ray examination during a specified period. A large number of persons living outside the city, who either worked in the area or were visiting it, were radiologically examined at the same time. Table VI shows the total number examined and the number of active cases found for males and females amongst residents and non-residents in the City of Sydney.

It is significant that a higher rate (2 per 1000) of new active cases of tuberculosis was found amongst residents who were compelled to attend as compared with non-residents who attended voluntarily (1 per 1000).

demonstration of the high proportion of elderly males with active tuberculosis. It was most noticeable that in the age group over sixty-five years, for approximately the same number of persons of both sexes radiologically examined, over 12 times as many new active cases of tuberculosis were detected among males. In females the great majority of cases were found in the child-bearing age groups.

From the analysis in Table VIII can be seen the different rates among those aged under forty years and those aged forty years and over.

Figure I illustrates graphically the incidence of new active cases in males and females in five-year age groups.

From Table IX it can be seen that the proportionally highest incidence was found among people of Chinese origin. Second highest was in Group B, in which England and Scotland were responsible for 34 cases, Ireland for four, South Africa for one, and New Zealand for five. The "breakdown" for Group C (Europe) was as follows:

TABLE VII.

Number of Persons Examined and Number of New Active Cases of Tuberculosis Detected in Sex and Age Groups.

Age Group. (Years.)	Males.		Females.		Totals.	
	Number Radiologically Examined.	Number of New Cases.	Number Radiologically Examined.	Number of New Cases.	Number Radiologically Examined.	Number of New Cases.
Under 14	276	—	287	—	563	—
14 to 19	7,846	1 (0·01%)	10,079	4 (0·04%)	17,925	5 (0·02%)
20 to 24	10,929	7 (0·06%)	10,342	12 (0·11%)	21,271	19 (0·09%)
25 to 29	13,225	21 (0·16%)	9,832	11 (0·11%)	23,057	32 (0·13%)
30 to 34	11,958	17 (0·14%)	8,946	20 (0·22%)	20,904	37 (0·18%)
35 to 39	10,416	14 (0·13%)	8,368	11 (0·13%)	18,784	25 (0·13%)
40 to 44	9,880	21 (0·21%)	8,281	9 (0·18%)	18,161	30 (0·16%)
45 to 49	8,847	26 (0·29%)	7,668	5 (0·06%)	16,515	31 (0·19%)
50 to 54	7,714	21 (0·27%)	7,186	6 (0·08%)	14,900	27 (0·18%)
55 to 59	6,144	35 (0·57%)	6,149	4 (0·06%)	12,293	39 (0·31%)
60 to 64	5,631	28 (0·49%)	5,643	3 (0·05%)	11,274	31 (0·27%)
65 and over	8,069	49 (0·67%)	8,361	4 (0·05%)	16,430	53 (0·32%)
Not stated	136	—	84	—	220	—
Totals	101,071	240 (0·23%)	91,226	89 (0·10%)	192,297	329 (0·17%)

TABLE VIII.

Age (Years).	Males.		Females.		Total.	
	Number Radiologically Examined.	Number of New Active Cases.	Number Radiologically Examined.	Number of New Active Cases.	Number Radiologically Examined.	Number of New Active Cases.
Under 40	54,650	60 (0·11%)	45,854	58 (0·13%)	100,504	118 (0·12%)
40 and over	46,421	180 (0·39%)	45,372	31 (0·07%)	91,793	211 (0·23%)

Baltic States 6, Poland 4, Scandinavia 3, Malta 2, Yugoslavia 1, Rumania 1, Holland 1, Czechoslovakia 1, Russia 1, Greece 1, Austria 1, Italy 1. In Group E ("Others"), 2 came from Egypt, 1 from Cyprus and 1 from New Caledonia.

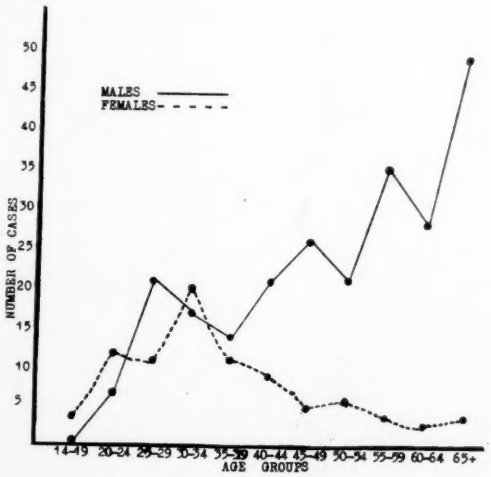

FIGURE I.

City of Sydney: new active cases.

Conclusion.

The result of this first compulsory mass X-ray survey in the City of Sydney was satisfactory and compared favourably with similar surveys conducted overseas. It proved an efficient procedure for finding active and infectious cases of pulmonary tuberculosis as well as other chest conditions in apparently healthy persons. It also showed that X-ray surveys of the whole community were practicable and essential.

Legislation making it compulsory for all persons over the age of fourteen years to attend for a chest X-ray examination was a tremendous help in the efforts to reach all sections of the population, particularly the older age groups—an important source of infection, as can be seen from the statistical analysis. Elderly people do not usually cooperate well in surveys conducted on a voluntary basis. This study indicates what has been suspected for some time—that pulmonary tuberculosis is becoming more a disease of older people, particularly males. The problem of the high incidence of active tuberculosis in young woman and aged men requires further study.

It is considered that the yield of new active cases in this survey was high, and that the number of persons with advanced disease was excessive. Further regular X-ray follow-ups of the population of the City of Sydney are indicated, and will increase the percentage of lesions detected in the minimal stage.

The cooperation of the public was excellent, and few persons were disturbed because of suspicious shadows. Definite decisions were not made on radiological appearances alone, and laboratory confirmation in each case was undertaken.

As a result of the educational campaign conducted simultaneously through Press and radio, the public was better informed about tuberculosis and was shown the need for regular chest X-ray examination.

The members of the medical profession cooperated well in the surveys and were appreciative of the services rendered to their patients. As a routine, each person recalled for a reexamination was requested to give the name of his private doctor, to whom a report was sent.

A further study based on this survey will discuss other findings, such as symptomatology, associated disease, exposure to infection, occupation, social conditions, and disposal and treatment of all persons with active tuberculosis detected in the City of Sydney.

TABLE IX.

Country of Birth of Persons Radiologically Examined and of Those with New Active Tuberculous Lesions.

Group: Country of Birth.	Males.		Females.		Total.	
	Number Radiologically Examined.	Number of Active Cases.	Number Radiologically Examined.	Number of Active Cases.	Number Radiologically Examined.	Number of Active Cases.
A: Australia	78,768	175 (0·22%)	78,333	76 (0·09%)	157,101	251 (0·15%)
B: Great Britain, Ireland, South Africa, New Zealand	9,263	37 (0·39%)	6,894	7 (0·1%)	16,157	44 (0·27%)
C: Europe	9,764	20 (0·2%)	3,856	3 (0·07%)	13,620	23 (0·16%)
D: China	634	7 (1·1%)	260	—	894	7 (0·78%)
E: Others	2,642	1 (0·03%)	1,883	3 (0·15%)	4,525	4 (0·08%)
Totals	101,071	240 (0·23%)	91,226	89 (0·09%)	192.297	329 (0·17%)

Summary.

1. The compulsory case-finding survey for tuberculosis utilized four mobile units in the City of Sydney. A total of 192,297 persons were radiologically examined.

2. Maximum use of the equipment was made. An average of 1900 X-ray pictures was taken per day.

3. Approximately 50% of persons examined were radiologically examined for the first time.

4. Three hundred and twenty-nine persons with new active lesions and 23 with a history of previous tuberculosis were found. In all except one case bacteriological proof was obtained. Also 1886 inactive cases and 901 cases of non-tuberculous pathology were detected.

5. The percentage of persons with advanced disease (58%) detected was larger than expected.

6. The survey of the City of Sydney disclosed the fact that the incidence of active pulmonary tuberculosis was twice as great amongst residents as amongst non-residents.

7. Of the 329 new and active cases detected, 240 were in males and 89 in females. Among females, the majority were detected in persons under the age of forty years (58 cases), and in males among those over the age of forty years (180 cases).

8. Approximately 20% of the subjects radiologically examined were persons born outside Australia. The highest incidence of tuberculosis was found amongst males of Chinese origin (1·1%), and the second highest amongst persons from the United Kingdom.

Acknowledgement.

I wish to thank the Honourable Mr. Justice E. P. Kinsella, President of the Anti-Tuberculosis Association of New South Wales, for permission to publish this article.

Reference.

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THE RESULTS OF TREATMENT OF CANCER OF THE LIP, MOUTH AND TONGUE, AND OF THE BREAST.[1]

By ALAN NELSON,

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THIS paper is based primarily on the case histories of patients treated in the radium department of the Royal Perth Hospital since 1930. The treatment has been in the hands of a number of radiotherapists, who from time to time have endeavoured to follow the advances made overseas in the technique of radiotherapy, particularly in the United Kingdom. The period concerned has seen the introduction of accurate high voltage X-ray machines in the department, the introduction of modern systems of X-ray dosage and the general introduction of the radium dosage methods of Paterson and Parker in 1938. No attempt has been made to compare methods of radiotherapy technique. The report is in four parts according to the cancer sites.

[1] Read at a meeting of the honorary medical staff of the Royal Perth Hospital, October, 1953.

CANCER OF THE LIP.

The collection of cases of cancer of the lip included in the report was made originally to answer specific questions about the treatment of cancer of the lip arising out of the activity of the combined clinic at the Royal Perth Hospital. This clinic, with representatives from all the specialities and departments of the hospital, functioned as a consultative clinic for cancer patients for several years after the war, and was of great value in working out the treatment of conditions in which both surgery and radiotherapy played their part. A further series of cases handled by the writer since 1947 has also been included.

An analysis was made of the records of all patients suffering from cancer of the lip who attended the radium department of the Royal Perth Hospital from 1929 to 1949—a period of twenty years. Many of these case sheets were found to be incomplete, and a systematic attempt was made to see the patients again or to discover what had occurred since they had attended the clinic. The follow-up obtained was not sufficiently good for the calculation of exact five-year cure rates, but this was not the purpose of the investigation. It was also noted that less than 10% of the patients had the diagnosis confirmed by biopsy, but the clinical descriptions and the fact that all the patients were initially examined by experienced radiotherapists gave no cause for doubt about the diagnosis. At the time it was thought at the clinic that the clinical diagnosis of this condition was sufficiently exact, and that the introduction of routine biopsy was not justified, in that it would complicate the radiotherapy and would impair the cosmetic result of treatment. This series included a number of different methods of treatment which had been carried out by at least ten different clinicians. The majority of patients were treated by implantation of radium needles, some more superficial lesions were treated by radium plaques, and a relatively small number of lesions was treated by X-ray therapy, usually in a single dose. In a few cases radon was used in place of radium needles, and in a few primary excision was used. Most of the treatments were carried out before adoption of the modern physical systems of calculating dosage of irradiation. No conclusions can be drawn about the value of different methods of treatment; but the results are a tribute to the skill with which these various methods were applied.

In the assessment of final results great assistance was obtained from the records in the department which had been regularly obtained from the Registrar of Deaths over many years. A survey of all the case histories tends to show that the recorded number of patients who had died and the cause of death as stated were accurate. At the time of the survey, 236 patients had died from a variety of causes corresponding to their age groups. Out of 742 patients, 69 (11%) definitely died of cancer of the lip. As

for those patients who were apparently still alive, 127 (18%) had been lost sight of after one year of treatment. Since that time information has been obtained from quite a number of these patients that they are well. Consideration of the other case histories suggested that if a patient survived for one year free of local or regional signs of growth, it was not common for recurrence to take place in subsequent years. When all these factors were taken into consideration, it appeared that at least 75%, and probably more, of the patients reporting to the clinic over this period of time had been cured of the condition.

The specific problems to be solved were, firstly, the effectiveness of the treatment of the primary growth, secondly, the correct method of treatment of the neck, and, thirdly, the effect of youth on the course of the disease.

However, other interesting information became available from the survey. The youngest patient was a male, aged sixteen years. Forty-three cases of cancer of the lip (6%) occurred among females. Most of the lesions occurred in the lower lip, only 50 (7%) in the upper lip. Of the latter, 20% were found in females, so that this site is apparently more common in the female sex. There was also a higher number of basal-celled carcinoma in the female series. On the other hand, it is noteworthy that in the females series 70% of the lesions were squamous-celled epitheliomata and occurred in the lower lip. Of the cases 7% occurred in patients aged under thirty years.

There were 69 deaths due to carcinoma of the lip; in six of these the mandible had been invaded, and in five the disease had become generalized throughout the body. In the other cases, death was due to the effect of the disease in the mouth and neck. Among the patients who died of the disease, the average duration of life after treatment was two years. Surgery was used in the treatment of the neck in 45 cases, and of the primary growth in a smaller number of cases. A perusal of the case histories suggested that there had been a reluctance on the part of the clinicians to resort to surgery, and that if it had been used more freely a certain number of patients might have been saved.

The Effectiveness of Treatment of the Primary Growth.

An analysis of the cases in which the disease was fatal revealed that death had been directly due to the primary growth in 19, but there were 30 cases in which the primary growth had not been controlled. In seven cases the primary growth was so extensive on the first examination as to be almost beyond treatment of any kind, and these patients all died. This leaves 23 cases, representing one-third of the deaths due to cancer of the lip, in which treatment of the primary growth had been inadequate. However, the progress notes of the patients in the series showed that in 66 cases (9%) there had been a definite recurrence after treatment, and in a great number of these a second treatment, usually by repeated implantation of radium or by surgery, had resulted in control of the primary growth. The majority of the patients in the series had small lesions, one or two centimetres in diameter. Most of the failures in treatment were in cases of larger and more complicated tumours. The number of complete failures represents 3% of the series, and it may be concluded that the treatment of the primary growth had been fairly satisfactory by the various methods of irradiation used, although it must be admitted that in some cases the initial form of treatment chosen was not adequate. The figures show the importance of follow-up examination.

In the last five years, since the introduction of Manchester rules of dosage in the radium treatment of cancer of the lip, recurrence of the primary growth has been seen in only 1% of the patients treated. In the last few years in Perth, a radon implant has become the treatment of choice for all tumours which can be regarded as carcinoma of the lip. X-ray therapy is reserved only for uncomplicated areas of hyperkeratosis. By the use of a simple arrangement of needles, it has been possible for the majority of the patients to be treated as out-patients, and often to continue with their usual occupation during the week when the needles are *in situ*. In order to obviate the use of short vertical radon needles which cross the end of the implant in the lip and cause inconvenience to the patient, radon needles with extra loading at each end have been used in some cases. In most cases in which the lesion is not large, the method used has been that introduced by Dr. P. D. Braddon, of Sydney, by which two parallel needles, considerably longer than the diameter of the lesion, are placed in the lip immediately below the lesion. It has been the impression that the cosmetic results obtained by these methods have been superior to those obtained by X-ray therapy, radium plaque application or operation. The radium mould method as advocated by Paterson in Manchester has not been used because of the large number of patients presenting with the condition, and the absence of extensive technical facilities.

The Treatment of the Neck.

The problem was to determine whether it was reasonable to continue with the policy of "watch and wait" which had been adopted in the various clinics of the hospital over the last years, or whether a routine dissection of the glands in the neck should be the correct procedure. As there were some clinicians who tended to request X-ray therapy in cases of secondary glandular metastases, it was necessary to determine whether surgery or radiotherapy was the superior method of treatment in such cases.

Cases in Which Initially No Glands Were Involved.

There were 78% of the patients in this series in whom affected glands were not present at the first examination. During the subsequent period of observation, malignant glands appeared in 53 cases—that is, in 9% of the previously free patients. It appeared from this that it would be unreasonable to subject 600 patients to radical dissection of the glands of the neck in order to prevent the appearance of malignant glands in 53. A survey of the series suggested that very few patients were overlooked in the carrying out of this policy of "watch and wait", and it was decided that the policy should be continued. The majority of the metastases appeared within the first eighteen months after treatment of the primary growth, but an appreciable number appeared two or three years after, so it is important to maintain a careful follow-up examination for several years after treatment.

Cases in Which Glands Were Involved.

At the first examination there were 160 patients (22%) with palpable glands in the submental, submandibular or upper deep cervical regions; 60% of these glands were proved by observation or by operation to be innocent of malignant disease. The remaining 66 patients actually had involved glands. This proportion of 9% with metastases has not been reached in more recent series. It is obvious that the disease is being currently recognized and treated at an earlier stage.

This experience suggests that no attack on palpable glands should be considered until the primary growth has been cleared up, unless, of course, the glands are obviously involved, and that in cases in which there is doubt as to the nature of palpable glands it is reasonable to delay treatment for a few weeks to assess progress.

Results of Treatment.

There were 120 cases of metastases in the series. Fifty of these patients died, and the remaining 60% were saved, 36 by surgery and 34 by radiotherapeutic methods. Of the latter, the usual method chosen was a course of deep X-ray therapy. This shows that X-ray therapy is of definite value. A comparison of methods is seen in the following statement: of 60 patients treated by radiation therapy, 26 died; of 45 patients treated by surgery, nine died; of 14 patients not treated, all died.

It must be stated that the first group included some cases in which massive glands were present, but there is no doubt from this that dissection of the glands of the neck was the more reliable means of treatment.

The Effect of Youth on the Disease.

In this series, there are 48 patients who were aged under thirty years when affected by the disease. There was only

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one female, and also one case of basal cell carcinoma. These rates, each 2%, are lower than the general series. In 14 cases the lesions were well advanced when the patient was first examined, this proportion being representative of the whole group.

This small group was treated according to the same principles as in other cases. Six patients died, and the survival rate was virtually the same as that for the whole series. In some cases death was due to failure to control the primary growth.

The affection of regional cervical glands was twice as common in the younger age group; 12% of the patients had palpable glands at the first examination; 20% of the remainder subsequently developed cervical glandular enlargement. However, it was considered that the policy of careful observation and delay until definite metastasis occurred was still justifiable in this group, in view of the good cure rate.

It is of interest to review the cases of cancer of the lip treated in Perth during the last six years, since this disease has been under the particular interest of the writer. During this period it is believed that most patients with cancer of the lip in this State have been referred for radiotherapy to the two centres in Perth where this is available. The number subjected to primary surgical excision is believed to be very small. Two hundred and twenty patients were examined and treated by the radon implant method mentioned. In the same period 60 were treated by X-ray therapy, these all having very small lesions or active hyperkeratosis. In a population of 500,000 this suggests that the incidence is at least 47 per year, or 94 per 1,000,000. Hartnett, in a survey of cancer in London, quotes a mortality rate of eight per million for all males from cancer of the lip. In the series reviewed by him, 25% of patients died of cancer, which suggests an incidence of 32 per million. It would appear, then, that this disease is at least three times more common in this State, and this confirms a general impression.

In the 280 recent cases, less than 20% of the patients had a primary growth any larger than two centimetres in diameter, and only 3% or 4% have had palpable glands when first examined. Some of these glands have disappeared without treatment.

In the 220 undoubted cancers of the lip treated by radon, 12 patients have died, but only three have died of cancer of the lip. Two had uncontrolled metastases. In one, recurrence in the lip extended to the mandible. In only 11 cases was operation undertaken for metastases, and in two of these the glands were found to be innocent.

In only one case was local recurrence observed. In several cases new lesions were later observed in other areas of the lip. In 3% of the cases a small chronic ulcer occurred after two or three years as a result of ischæmic necrosis. Some ulcers healed readily with topical applications, and in two cases simple excision was employed to shorten the period of disability. Another interesting feature has been the frequent susceptibility to tiny dental ulcers occurring sporadically on the inner surface of the treated lip in the year following radium therapy.

It therefore appears that in the last six years in 99% of 220 cases of cancer of the lip treated by radon, the cancer has been controlled. The cosmetic result has been excellent. In most cases the site can be distinguished only by the condition of the hair follicles on the lip. During the desquamatory reaction, which involves the region of the tumour on the inner and outer surfaces of the lip for three or four weeks after the removal of the radon, the beard over a segment of the chin disappears; but the permanent depilation occurs only on a small area.

Conclusions.

It appears that cancer of the lip is being recognized and treated at an increasingly early stage. Consideration of these results suggests that the treatment of carcinoma of the lip by radium at the Royal Perth Hospital even before the introduction of a precise physical basis of dosage calculation was to be regarded as a satisfactory method. It appears that a more vigorous application of surgery as a supplementary method of treatment, both when the primary growth was uncontrolled, and when the presence of secondary glands was indisputable, might have resulted in a few more cures. The policy of watching and waiting in the routine surgical treatment of the neck, provided vigorous action is taken as soon as required, seems to have been justified.

The slightly higher incidence in young men is a warning that care should be taken in the periodical observation after treatment of primary growth. There is no evidence that the site of the lesion in the lip affects the prognosis.

Oral Cancer.

Cancer of the mouth was much less common. It is considered in five sections, according to site.

In the same period of twenty-two years, 31 cancers occurred in the floor of the mouth. In 14 the primary growth was healed by radiotherapy, but in five recurrence took place after one or more years. Two patients subsequently developed malignant enlargement of glands in the neck.

Four patients died free of cancer from one and a half to twelve years afterwards, and four are still alive one, four, eight and ten years after treatment. One might say that the result was satisfactory in about a quarter of the cases.

There were 12 cases of cancer of the alveolo-labial sulcus, and in five the primary growth was controlled; but in four of these recurrence took place after one or more years, and the other patient is free of cancer one year after treatment. The results cannot be called satisfactory.

There were 12 cases of cancer of the cheek, and of these the primary growth was controlled in seven, but recurrence took place in three. Of these three patients one died, but in two the disease has been controlled by drastic surgery. Two patients died free of cancer after three and four years, and two are alive three years after treatment. Treatment has been successful in about half of these cases.

Fifteen cancers occurred on the alveolus. In five cases the primary growth was controlled, but in two it recurred and the patient died. The three living patients were treated with radon three, four and five years ago. In most of the earlier cases treatment was by X-ray therapy and was not effective. Treatment by gold seed implant when applicable or by radon mould on a specially constructed dental applicator is a satisfactory method of treatment.

None of the 16 patients with cancer of the palate are alive. In seven of the cases the primary growth was controlled, and three patients died free of cancer several years later. In four others the growth recurred after one to two years. The total number of cases of cancer in all parts of the mouth represents only an average of four per year. This rather uncommon disease has obviously not been well treated over the years when it is considered that most large clinics report better than a 35% five-year cure rate in these groups.

In the survey it is notable that in 48 cases (56%) the primary growth was not controlled. However, the majority of the patients until recent years had advanced cancer often invading mandible or skin or regional glands. In very few of the earlier cases were radium techniques used, and in many the use of radium was not possible. More recent experience has confirmed the fact that external X-ray therapy alone is unreliable in controlling oral cancer. When it is available, it is clear that external irradiation with the radium bomb is often effective in advanced cancer of the mouth. In this clinic the interstitial use of radon more recently has given more encouraging results.

One interesting feature which has been observed in a number of cases is the occurrence of new malignant areas on the oral mucosa, remote from the treated lesion. Usually this is preceded by the appearance of leucoplakic patches, but sometimes preexisting leucoplakia may persist and develop new characteristics. In one case, biopsy of the active area showed a number of separate malignant down-

growths. This suggests that in at least a proportion of cases there is a premalignant tendency in the whole of the mucosa. The same tendency is clearly demonstrated in common hyperkeratosis and epithelioma of the skin of the face and hands, and has been observed on the vermilion border of the lip, and in the mucosa of the whole bladder, where new papillocarcinomata appear some time after destruction of isolated growths or even after irradiation of the whole bladder.

The implication is that the treatment of oral cancer must include the acceptance of the responsibility to expect, observe and treat new lesions in their early stages, as well as to treat recurrences in a radical manner.

CANCER OF THE BREAST.

A series of 700 patients with carcinoma of the breast was referred to the radium clinic over a period of twenty-two years from 1930 to the beginning of 1953. All of these had radiotherapy, and a majority underwent resection of the breast. The technique of radiotherapy varied. In one series moderate dosage was given to the breast and affected glandular areas immediately before operation. A larger series of patients had post-operative X-ray therapy, but in some cases the dose was not very high; in other cases a severe reaction was produced as a result of the giving of a full cancericidal dose. In some cases only the scar was irradiated and in others the whole chest wall. In the last five years the internal mammary chain has been systematically irradiated with the whole side of the chest wall round to the mid-axillary line in addition to the supraclavicular region and the remains of the axilla. In many cases a serious attempt was made to irradiate all tumour-bearing areas. Secondary and metastatic deposits have been irradiated in palliative fashion.

The follow-up investigation has been carried out by yearly reporting, the patient being written to if she did not come for examination. When records failed, names have been submitted to the Registrar-General and certificates of death obtained. This record of death may be expected to be reliable, because the population does not rapidly change in this State. Experience has proved this check to be very reliable. The statistics are presented with no distinction whether the death of the patient was due to carcinoma or to intercurrent illness. The survey shows that of the 700 patients, 283 are still alive; 61 have survived for periods varying from eleven to twenty-two years, as shown in Table I.

In these 61 cases the disease may be regarded as well controlled, since the analysis showed that the number of patients who died after such periods was small and not very much more than might be expected from natural chance.

A survey of the time after treatment at which death occurred is informative. The percentage is a rough index based on the number at risk (Table II).

These figures indicate a heavy mortality in the year after treatment, when one-fifth of the patients are lost mainly from recurrences. In each other year almost 10% of those still alive are found to die, until the tenth year, after which the chances of survival seem to be greatly improved. In these series twenty years was the longest period after which death occurred from cancer; but in private practice one has seen death due to metastasis occurring twenty-two and twenty-five years after the original treatment.

When it is considered that in the natural history of untreated breast cancer about 25% of patients will survive for five years, we can now assess the value of treatment in this hospital. In the first series of 381 patients treated up to 1942, 92 survived the ten years, a 24% ten-year survival. Of this group 141 survived at least five years (37%). This is a 40% improvement on the survival of untreated patients and is a measure of the worth of treatment. Further details are seen in Table III, which suggests that the control of the disease has improved slightly over the twenty years under consideration.

The incidence of cases referred year by year to the radium clinic shows a slight but distinct rise of almost 20% over the twenty-year period (Table IV). This increase had occurred at the beginning of World War II, but during the years from 1942 to 1947 considerably fewer patients were referred, apparently owing to the disorganization of staff resulting from war service. For the purpose of arriving at the incidence in this State, it might be estimated that about an equal number of patients would receive treatment elsewhere each year.

TABLE I.
Survival Time of Patients Still Alive.

Number of Patients.	Period of Survival (Years).
6	22
6	20
2	19
3	18
5	17
2	16
4	15
4	14
5	13
9	12
15	11
Total 61	—

Cause of Death.

Of the 420 deaths, the cause is known to have been cancer of the breast in 90%. Of this 90%, the operative treatment was the cause in four cases (1%); of the remaining 10%, the cause could not be ascertained in nine; thus in only 35 (7%) can it be said that death was not due to cancer.

TABLE II.
Survival Time of Patients Who Have Died.

Time of Death.	Number of Deaths.	Percentage of Patients at Risk.
Year of treatment	71	10
1 year after treatment	133	20
2 years after treatment	57	10
3 years after treatment	59	12
4 years after treatment	26	12
5 years after treatment	22	10
6 years after treatment	11	8
7 years after treatment	9	9
8 years after treatment	8	10
9 years after treatment	5	9
10 years after treatment	10	12
11 years after treatment	2	3
12 years after treatment	2	4
13 years after treatment	3	7
14 years after treatment	0	0
15 years after treatment	1	3
16 years after treatment	2	8
17 years after treatment	0	0
20 years after treatment	1	2

Value of Treatment Methods.

Two groups are considered in the analysis of treatment methods.

The forms of treatment given to those patients who are alive at present are as follows: 227 (80%) had radical mastectomy *plus* radiation therapy; 33 (12%) had simple mastectomy *plus* radiation therapy; 23 (8%) had radiation therapy alone. These figures suggest that X-ray therapy is a measure of some effect in controlling the disease.

The forms of treatment given to those patients who have since died are as follows: 296 (71%) had radical mastectomy *plus* radiation therapy; 32 (8%) had simple mastectomy *plus* radiation therapy; 89 (21%) had radiation therapy alone.

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These figures suggest that radiation therapy alone is an inferior method of controlling the disease. A similar impression has been gained by the frequent observation of a recurrence of a treated primary growth, although involvement of axillary glands has not recurred. For this reason a simple mastectomy has been advocated by the radium department whenever possible in advanced cases. Moreover, the following figures suggest that simple mastectomy with radiotherapy is more effective than might be thought: of 523 patients who had radical mastectomy *plus* radiation therapy, 43% are alive; of 65 patients who had simple mastectomy *plus* radiation therapy, 50% are alive.

This supports the contention of McWhirter, who considers that dissection of the axilla achieves nothing that

TABLE III.

Period of Treatment.	Period of Survival.
1930 to 1935	37% survived 5 years.
1936 to 1942	39% survived 5 years.
1943 to 1947	40% survived 5 years.
1947 to 1952	156 of 200 (78%) still alive.
1947 and 1948	40% still alive, 5 years.
1949	50% still alive, 4 years.

cannot be effected by adequate radiotherapy, but in addition increases the risk of dissemination to distant sites.

In not all cases is a record of histological structure available in the radium department, but the majority of patients underwent operation, at which the breast was adequately examined. All surviving patients who had no operation have been checked; in many cases a biopsy was made, and in the other cases the clinical notes left no doubt about the diagnosis of carcinoma.

Site of Carcinoma.

The site of carcinoma was not significantly different between left and right sides; in 47% of cases it was on the left side, and in 49% on the right. Less than 4% of the patients had bilateral carcinoma of the breast. This is a smaller percentage than is generally thought.

Our figure of an absolute five-year survival rate of 40% should now be compared with reports from other centres. Zellenger and Adie, using mastectomy with full post-operative X-ray therapy, obtained a five-year survival rate of 38% when simple mastectomy was used, and 48% with radical mastectomy. Haagenson and Stout reported an absolute five-year survival rate of 25% to 30% prior to 1934, and of 47% since that date. McWhirter obtained a 43% five-year survival rate by using simple mastectomy with adequate X-ray therapy. Park and Lees have endeavoured to estimate the actual curability of this condition; they conclude that the five-year survival rate is not a reliable index, and that no form of treatment greatly affects the end result. A consideration of the fate of our patients studied in this series would tend to confirm this melancholy impression; but it can be seen that, taken as an index of control of the disease, the results of treatment here do measure up to those of the other clinics.

It is difficult to escape the conclusion that the small proportion of patients who die free from cancer (less than 10% of all those who have died) might well have developed clinical evidence of cancer if they had not prematurely succumbed to intercurrent disease or injury. In my mind the concept of the alternatives of radical cure or palliative therapy in this disease has to be changed, and all treatment regarded as palliation, either long-term or short-term.

Results of Treatment by Other Methods.

Use of Radiomimetic Drugs.

Experience in the use of radiomimetic drugs was restricted to triethylene melamine (TEM), it being thought that the use of nitrogen mustard was not justifiable. Small continuous daily doses were given in four cases. In three cases further deposits occurred, during or immediately after therapy, on the skin in two and in bone in one. In the other no radiological or clinical evidence of consolidation of bone metastases occurred. On the basis of these it is concluded that this method is of very little value. In two of the cases the granular cell count was considerably depressed. Experience in general with TEM shows no appreciable difference in its effects from those of nitrogen mustard, and it can be said that this is a fair trial of this group.

Use of Hormones.

Testosterone in the palliation of advanced breast cancer has passed into common use, particularly since the advent of the *Pharmaceutical Benefits Act*, and apparently it is given in many cases by the general practitioner, to whom

TABLE IV.

Number of Patients with Cancer of the Breast Referred Each Year.

Year.	Number of Patients.	Year.	Number of Patients.
1930	20	1942	34
1931	23	1943	21
1932	35	1944	28
1933	33	1945	26
1934	20	1946	26
1935	34	1947	20
1936	18	1948	30
1937	31	1949	26
1938	28	1950	33
1939	26	1951	36
1940	35	1952	42
1941	45	1953	60

these patients usually first apply for aid. To my knowledge, there has been no scientific evaluation of its effectiveness in this State. Most people have seen a patient or two whose pain from metastases is relieved; but radiographic evidence of consolidation of metastases is not so frequently obtained. The impression is that 50% of patients gain worthwhile relief from sustained and adequate administration. Hochman reported in 1952 on the results of X-ray sterilization of 60 patients with active breast cancer; 56% were improved, and the improvement usually lasted for one and a half to two years. Once again, this method has not been scientifically evaluated in this State. The effect of œstrogen in the control of metastatic cancer of the breast should be kept in mind. In a few cases it causes an aggravation of cancer growth, but in 40% of older women a satisfactory regression of bony and soft tissue lesions is obtained.

CANCER OF THE TONGUE.

Cancer of the tongue has been present in 139 cases referred to the radium department over the twenty years, an average of seven cases per year; this is a higher incidence than that of cancer of the oral cavity. The treatment in 100 cases has been by a radium or radon implantation. The use of X-ray therapy in the remaining 28% was determined by the size of the primary lesion, either because it was too large for practical implantation, or because it had directly invaded other structures. No patient of the latter group survived more than one year after treatment; but many patients obtained temporary relief of distressing symptoms. The facts suggest that, unlike cancer of the breast, this is a rapidly fatal disease. With this conclusion in mind, the cause of death was studied in 12 cases which terminated fatally from four to sixteen years after treatment. Only in seven out of 12 was cancer the cause of death. In two of these death occurred eleven years later from secondary deposits in glands, the primary growth having been quite small in each case. Further light on permanence of cure is found from other cases in the first decade under discussion. Only nine of these patients survived for five years or more, but at the end of ten years five of the nine were left.

It does appear that in some cases of this disease the concept of radical treatment may be correct.

The results of treatment show a definite and progressive improvement in more recent years. Absolute survival

rates are quoted. Up to 1941, 95 patients were treated, with a five-year survival rate of 9·5%. Over the next six years 26 patients were treated, with a five-year survival rate of 40%. At the Holt Radium Institute in the period from 1934 to 1938 there were 360 cases of cancer of the tongue, and 26% of the patients survived for five years. Of these, 303 were treated by radium, and 28% survived for five years. In our whole series, of those treated by radium, 20% survived for five years, but more recent figures are better. The significant factor in the improvement of results has been the use of radon, which is essential for implantation in the tongue in this country, where standard radium applicators are all of unit strength —that is, one milligramme of radium element per centimetre. In order to use volume arrangements, involving several planes or a cylindrical pattern, very weak needles of varied strengths are required, and these can be supplied by the Radon Laboratory.

Comparison of Results with Other Reports.

Juliette Baud, of the *Fondation Curie*, reported on the treatment of 1055 patients with cancer of the tongue. The five-year survival rate of those treated by radium was 25%. Bergen, of the *Radiumhemmet*, using teleradium, obtained similar results. The results of radium treatment by Sir Stanford Cade at Westminster and of Professor Windeyer at Middlesex are of the same order. It thus appears that the overall treatment here is almost up to average, with the promise of improvement having occurred in later years.

It is interesting to note that two-thirds of our patients died within a year. Greater efforts to obtain initial control of the primary growth are therefore required.

Treatment of Glands in the Neck.

Sir Stanford Cade in his report illustrates the fact that cancer of the posterior third of the tongue is less easily controlled and must be treated by external irradiation, preferably by teleradium. The presence of involved lymph glands is serious. It is generally agreed that block dissection is the best mode of treatment of involved glands, except when they are large or fixed, when irradiation is necessary. In Cade's series, whereas 56% of patients with early growths survived for five years, only 9% of those with lymph gland involvement were alive after that time. In our series, 42 patients, or one-third, had involved glands when first examined. All except one patient had died. Four patients survived for five years or more. The five-year survival rate was thus 10% if involved glands were present, but 22% in those cases in which glands were not originally involved.

Value of Prophylactic Dissection.

In other clinics prophylactic dissection of the neck is not advocated, unless for some reason regular observation is impossible. In our series 38 patients developed involvement of glands in the neck after treatment of the primary growth. This is 30% of all cases, but represents 42% of those who had no enlarged glands when first examined. In 17 cases the primary growth was less than three centimetres in diameter, while in 21 the primary growth was larger than three centimetres. Eight patients survived for five years or more, that is 22%, which is about the same as the whole group in which no glands were present on first examination. Our experience, therefore, confirms the principle of watching and waiting in cases in which glands are not palpable.

Other Methods of Treatment.

It is generally agreed that radiotherapy is the treatment of choice in cancer of the tongue, but there are some definite indications for operation as well as for dissection of glands in the neck. In Windeyer's series, surgery was used when recurrence followed radiotherapy, or if the whole tongue was involved by a diffusely infiltrating growth, or if cancer had supervened on an area of pre-existing syphilitic glossitis with woody induration and diminution of blood supply, or if the growth had spread to involve the mandible, or if the growth was bulky and hypertrophic, limited to the anterior third of the tongue. At this hospital, surgery has been employed in the treatment of recurrence in woody infiltration of the tongue, and diathermy has been used to control small recurrences. It is likely that by collaboration in suitable cases the proper use of surgery as an adjuvant measure might save additional patients. The fact that the patient with an uncontrolled primary growth lives for less than a year must justify heroic surgical measures in particular cases in which the result of irradiation is doubtful.

The care of many of the patients with uncontrolled growths has been the responsibility of the radium department, and it would appear that no treatment, even external irradiation, has much effect on the relentless progress of the disease. Since the reports of Maguire, of Sydney, a course of cortisone and "Aureomycin" has been employed, and the relief of pain and the clearing up of dirty infected primary ulcer have been striking; but it has been quite understood that nothing more than control of infection was being achieved. In three cases nitrogen mustard or TEM has been employed. In one case the primary growth appeared to diminish, but the course of the disease was uncontrolled.

Conclusion.

The incidence and the results of treatment in the radium department of cancer of the lip, oral cavity, breast and tongue over the last twenty-two years have been presented with a background of experience from other clinics, and the efficacy of certain lines of treatment has been analysed. In general the results are fair, but somewhat below the standards of the leading clinics. The greatest shortcomings lie in those series in which radon or low intensity needles have been essential, and in which they were not available in the past. Although radical mastectomy remains a preferable operation in this centre, the results suggest that the advantage over simple mastectomy, when both are followed by X-ray therapy, is not so great that it should be used when there are technical or constitutional difficulties in the way of easy performance. An acceptance of the fact that practically all patients with cancer of the breast will eventually die of the disease must colour our whole approach to the condition.

It appears that in the relatively common carcinoma of the lip, radium control of the primary growth is quite satisfactory. In this disease and in others, it is obvious that ready collaboration between surgical and radium departments can lead to improved results in special problems and special circumstances relating to the care of patients with these conditions.

Acknowledgements.

Appreciation must be expressed of the excellent work of the technical staff of the radium department in the tracing, collecting and following up involved in many of the cases recorded, and of the cooperation and help of the whole Honorary Medical Staff of the hospital, at whose suggestion this report is published. In particular the assistance of Dr. A. A. Merritt, Honorary Radiotherapist, must be acknowledged; he originally instigated the present follow-up system, and many of the patients mentioned in this paper were in his care; without his cooperation this presentation would not have been possible.

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POST-MATURITY.[1]

By R. KENT BURNETT,
Sydney.

THE subject of post-maturity, on which Dr. Bellmaine and I have been asked to address you tonight, does not present separate problems from the obstetrical and pædiatric viewpoints. The mother's safety is not threatened, and therefore both obstetrician and pædiatrician are solely concerned with the welfare of the baby.

Dr. Bellmaine and I have thought it best therefore, in order to avoid overlapping and repetition, that I should very briefly deal with the historical side of the controversy, for controversy there certainly has been, and that he should then give you in greater detail the recent excellent work of Barcroft, Walker and others, which in our opinion has proved conclusively the importance of post-maturity *per se*.

Until recent work appeared, the subject of post-maturity could very reasonably be called a contentious one, about which many highly competent and sincere workers held diametrically opposed views.

Whether prolongation of gestation beyond the accepted 280 days causes post-maturity of the fœtus, whether post-maturity constitutes an obstetrical problem, and even whether a condition exists to which the name post-maturity can be applied, have been debated. Kamperman refers to it as a "state of mind of the obstetrician rather than an actual occurrence"; Holmes calls it a "figment of the imagination"; Calkins says that there is no post-maturity problem; Clayton, Wrigley and Latto, while admitting its existence, state: "No treatment is required for post-maturity per se"; Gladys Hill, in reviewing 115 cases, concludes that "post-maturity per se does not affect adversely the mother, her labour or her infant". Professor Bruce Mayes in his "Text Book of Obstetrics", in the section dealing with the reasons for induction of labour, states: "Do not induce for post-maturity. Its inclusion in our list is merely to condemn it as an indication. Admitting the occasional fœtal death in utero by adopting this routine, one submits that the number of babies lost in this manner will be very small in comparison with the number lost as a result of induction of labour."

These are all weighty opinions, and some of the reviews, notably Wrigley's, have been particularly exhaustive; but a large amount of recent experimental work and clinical research, and several recent large series of cases, afford strong evidence on which to base directly opposite conclusions from the above.

We have all had experience of cases which suggest that maturation of the fœtus may in certain cases occupy either a shorter or longer time than the stipulated 280 days, and the British courts, guided by expert medical evidence, have held that two children, one born only 207 days after its parents' marriage and the other 331 days after its father had gone abroad, were legitimate.

The fact that some women habitually have prolonged gestation periods has been commented on by many observers—namely, Latto, Stewart of Detroit and others. Stewart's paper, written in 1952, compared the duration of pregnancy in 135 women, whose date of conception was determined from basal temperature records, with that of 3500 women whose expected date of confinement was estimated from the last menstrual period. Stewart concludes that the maximum duration of pregnancy from ovulation to onset of spontaneous labour is 285 days, and that alleged prolongation of pregnancy to ten or eleven months is accounted for by delayed ovulation. This method of determining the date of conception would be difficult to apply to all cases of pregnancy. One great stumbling block to reaching a firm decision in this question is the impossibility, by clinical, radiological or biochemical criteria, of making a certain diagnosis of post-maturity, or of assessing the condition of the fœtus *in utero*.

In 1946, in a most comprehensive survey, Wrigley dealt at length with the paucity of definite advice on this subject in obstetrical text-books, and quoted at length F. J. Browne's criteria on post-maturity as being the most helpful. Wrigley himself emphasized the value of rigidity of the fœtus due to increased muscle tone, increased size of the fœtus and oligohydramnios.

F. J. Browne, who devotes some seven pages to this problem in his book "Ante-Natal and Post-Natal Care", stresses meticulously careful scrutiny of menstrual dates, size, hardness and mobility of fœtal skull bones, preferably palpated *per vaginam*, and taking up of the cervix.

Hamilton says that the size, hardness and mobility of the fœtal skull bones are an important indication, insists that the cervix be "ripe", dismisses "quickening" as too variable, and states that of the last 72 babies of ten pounds or over born at his hospital, only 29% were more than 290 days in fœtal age, and hence excludes increased size as being necessarily diagnostic of post-maturity. Many critics of routine induction of labour in post-maturity insist that asphyxia as a cause of fœtal death in post-maturity is not proven, and is hard to diagnose, and that irregularity of the fœtal heart beat is not a definite sign of asphyxia.

Clayton, in opposing routine induction of labour, says: "It would be unjustifiable to induce labour in patients who are thought to be post-mature, but in whom there is no evidence of disproportion, for the following reasons:

(1) The uncertainty of any diagnosis of post-maturity.

(2) The lack of any definite evidence that placental degeneration causes death.

(3) The risk of inertia."

Since 1946 valuable work has been done, particularly by Barcroft and Walker, on the factors governing the well-being of the fœtus (both animal and human) *in utero* at and after term.

This work has undoubtedly strengthened the claims put forward by McKiddie (1949), Hamilton (1951) and Racker (1953) that post-maturity *per se* is a cause of fœtal mortality *in utero*.

The notable recent opponent of this view is Latto, who, taking 294 days as his criterion of post-maturity, reported a 5·2% stillbirth rate in 171 cases, but corrected his figures to show that only one stillbirth was due to post-maturity. If one agrees with Walker's contentions about the increasing oxygen lack in the fœtus after full term, then obviously a post-mature fœtus will withstand difficult labour from any cause less successfully than a fœtus at term; hence Latto's corrections in the stillbirth rate lose their validity. Hamilton in 1950 reported 170 cases of 291 days' gestation or over, with a fœtal mortality of 8·2%.

In 1953 Racker and co-workers published an impressive report of 410 cases of 287 days' gestation or more, 149 of which were 294 days' gestation or more. In this total number (410) the stillbirth rate was 4·63%, and in the 149 cases in which the fœtus was fourteen days or more post-mature, the stillbirth rate was 8·72%.

Obviously one will get a clearer picture as more and more series are published and a wider general average is taken. If one averages the stillbirth percentages reported by Latto, Clayton and Racker for fœtuses fourteen days or more post-mature, one has the figure of 7%. To bring vividly before one's vision just what these vague averages mean, Racker applies the above figure to the British birth rate of 800,000 and shows that the fœtal loss from post-maturity (with fourteen days as the criterion) is 3920 *per annum*, a startling figure. Probably most of us would not agree that artificial rupture of the membranes on the day after the expected date of confinement, as carried out by Racker and his associates, is an acceptable procedure; but the stillbirth rate in 203 cases so managed was 1·47%, which obviously validates his claim that if these figures can be reproduced in additional series, there will be a saving of 3000 babies per year—another startling figure.

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on August 26, 1954.

In Hamilton's 1950 series of 170 cases, in which the mother was eleven days or more past the expected date of confinement, there were six fœtal catastrophes in which some other factor, such as disproportion, toxæmia *et cetera*, was present in addition to post-maturity. Also there were six catastrophes when there was no apparent difficulty other than post-maturity—one fœtus died before onset of labour, four showed evidence of distress during early labour and the fœtal heart sounds disappeared before delivery, while in the remaining case distress was shown, Cæsarean section was performed and a child was delivered with a palpable apex beat, but respiration could not be established.

These latter six deaths during labour were evidence that the placenta was incapable of supplying the fœtus with sufficient oxygen. The high incidence of fœtal distress, 43 cases, of which 40 were in *primigravidæ*, was additional evidence of failure of oxygen supply. McKiddie, in 1949, in comparing 1642 cases in which the mother was more than seven days beyond the expected date of confinement with 3366 cases in which the mother was at full term, found as follows (see Tables I and II).

TABLE I.
Fœtal Distress at Full Term and in Post-Maturity (McKeddie).

Stage.	At Full Term.	In Post-Maturity.
In utero	132 (3·9%)	126 (7·6%)
At birth	149 (4·4%)	114 (6·9%)

1. The percentage of stillbirths is higher amongst post-mature infants (2·8%) than amongst infants at term (1·3%).

2. The percentage of stillbirths rises with the degree of post-maturity (8 to 15 days post-mature, 1·6%; +15 to +21 days post-mature, 3·3%; 22 to 28 days post-mature, 7·4%).

3. The unexplained stillbirth figure rises with the degree of post-maturity (unexplained stillbirth rate at term, 0·3%; unexplained stillbirth rate in post-maturity, 1·1%).

4. Fœtal distress *in utero* is more common in association with post-maturity (Table I) and seems to be related to the degree of post-maturity (8 to 14 days post-mature, 5·7%; 15 to 21 days post-mature, 9·9%; 22 to 28 days post-mature, 9·7%).

TABLE II.
Stillbirths.

Fœtal State.	Total.	Unexplained.[1]
Full term	43 (1·3%)	9 (0·3%)
Post-mature	47 (2·8%)	18 (1·1%)

[1] "Unexplained" means that the mother appeared healthy and was well during her pregnancy, and had a normal labour ending spontaneously or by application of forceps at the vulva.

Earlier I referred to a series of cases reported in 1953 by Racker and associates. In this paper due importance is placed upon the work of James Walker on the oxygen content of the blood in the umbilical cord. This latter work of Walker's published in *The Lancet* in August, 1953, and the *British Journal of Obstetrics and Gynæcology* in April, 1954, in my opinion entirely disposes of the argument as to the importance of post-maturity. To save duplication or repetition these papers will be dealt with by Dr. Bellmaine.

Dudley Racker divides his cases into three groups:

1. Induced labour group (203 cases). In these the mother was admitted on the day before the expected date of confinement, and given a hot bath and enema, but no drugs, on the expected date of confinement. If labour had not started on the day after the expected date of confinement the membranes were ruptured artificially. These cases were entirely unselected and no exceptions made whether the mothers were *multiparæ* or *primiparæ*, or whether the presentation was by the vertex or breech, or whether the head was fixed or floating.

2. Post-mature group (419 cases). In these the mothers were all allowed to continue to spontaneous onset of labour unless there was some other obstetrical reason to induce labour.

3. Controls (maturity at term) (1229 cases). These were unselected cases of natural delivery at term during the previous two years, term being from seven days before the expected date of confinement to seven days after the expected date of confinement.

Racker's results are shown in Tables III and IV.

TABLE III.
Fœtal Mortality Due to Stillbirth.

Group.	Number of Cases.	Number of Stillbirths.
Controls	1229	19 (1·54%)
Induced group	203	3 (1·47%)
Post-mature group (all more than seven days past expected date of confinement)	410	19 (1·63%)

Time will not permit quotation of all the important and interesting facts and figures from Racker's paper, such as the fact that the Cæsarean section rate in the induced labour group was less than one-quarter of that in the post-mature group, and the instrumental delivery rate in the induced labour group less than half that of the post-mature group.

In my opinion the outstanding feature of his investigation is his radical choice of the day after the expected date of confinement for surgical induction of labour. This was done deliberately, so that if his results were reasonable, he could refute the argument that he would have a high proportion of premature babies. His figures show that the smallest baby in the induced labour group weighed 5·4 pounds, and the average birth weight was almost the same as that of the controls.

TABLE IV.
Stillbirth Rate in Post-Mature Cases.[1]

Post-Maturity.	Number of Cases.	Number of Stillbirths.
From seven to thirteen days	261	6 (2·31%)
Fourteen days or more	149	13 (8·72%)

[1] The differences between the fœtal mortality of the two post-maturity groups (2·31% and 8·72%) and between the induced group (Table III) and the group in which the post-maturity was more than fourteen days (1·47% and 8·72%) are significant.

Opposition to such a radical measure as surgical induction of labour when gestation has exceeded 280 days could until recently be logically justified; but when a succession of painstaking, careful investigators like McKiddie, Hamilton, Latto, Racker, Walker and others produce evidence that fœtal distress and stillbirth occur more frequently in post-maturity, and that these catastrophes increase in frequency with the degree of post-maturity, the reasons for that opposition need careful revision. And when a brilliant piece of clinical research such as Walker's makes it at least a reasonable assumption that fœtal anoxia, due solely to post-maturity, is the cause of the said catastrophes, then I feel that one must conclude (i) that post-maturity is *per se* a threat to survival of the fœtus and (ii) that surgical induction of labour at some arbitrary time after the expected date of confinement will result in appreciable fœtal salvage.

Obviously the ideal to be aimed at would be the ability to assess accurately the condition of each child *in utero*, and to say confidently that in this case induction of labour is necessary, in that one the mother may be left alone. Failing that, it appears that many babies will be saved by admitting that post-maturity is an obstetrical problem and inducing labour at some arbitrary date, say, the tenth day after the expected date of confinement.

Without encroaching too much on my colleague Dr. Bellmaine's preserves, I would like to quote the conclusions drawn by J. Walker from his statistics:

1. The obstetric death rate is three times as high at the forty-third week as it is at the fortieth week, because of an increase in stillbirths.

2. This increase is due mainly to a rise in incidence and proportion of unexplained deaths.

3. There is, with *primigravidæ*, also a rise in the incidence and proportion of deaths due to difficult vertex labour, but the increase is mainly because of many more deaths from anoxia and only in small part because of an increase of cerebral birth trauma.

4. The incidence of fœtal distress rises sharply after forty weeks. With *primigravidæ* the rise is partly explained by an increase in distress associated with the rising incidence of difficult labour. With both *primigravidæ* and *multigravidæ*, however, the main factor in the rise is a great increase in the incidence of cases in which there is meconium staining, which, though clinically unexplained, is due probably to a marked deficiency in the oxygen supply to the fœtus.

As I informed you, my role tonight is merely to introduce the subject and to prepare the way for Dr. Bellmaine to put before you fully what I regard as the completely convincing work of J. Walker of Aberdeen.

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Reports of Cases.

A REPORT OF THREE CASES OF BILATERAL RENAL AGENESIS.

By RUTH OSMOND,

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BILATERAL renal agenesis is a rare condition. One hundred and seventy-five cases have been reported since 1663, and the literature has been reviewed and summarized by Amolsch (1937), Hinman (1940), Levin (1952) and others. No definite ætiology has been established. It is generally agreed that the incidence is approximately 0·4 per 1000 births, although Potter recorded a higher proportion in her series (20 cases in 5000 autopsies). Therefore, the occurrence of three cases within four weeks in a small series of 25 autopsies which had been performed at the Queen Victoria Maternity Hospital since the establishment of routine autopsies, was considered worthy of investigation and report; the results are shown in Table I.

Although the incidence is higher in males, two of the three subjects (autopsies by Dr. A. D. Packer) were female infants who showed gross genital and other defects. The third subject (my own) was a male infant with no other developmental defect, and had the typical facies which is diagnostic of renal agenesia. This had been recognized prior to autopsy from the resemblance to the case reported by Mauger (1952) at the Adelaide Children's Hospital. The appearance was summarized by Potter as "an increase in the width between the eyes, a very prominent fold of skin arising at the inner canthus, a flattening of the nose, mild retraction of the lower jaw, and large low-lying ears with incomplete cartilaginous development", and the effect is that of premature senility.

Each infant was born alive, but succumbed within twenty-four hours. At autopsy in each case the adrenals had assumed a flat pancake shape and there was no discoverable remnant of kidney tissue. The associated hypoplasia of the lungs mentioned by Potter was present in all three, and the bladder was an elongated tubular structure.

TABLE I.

Observation.	Case I.	Case II.	Case III.
Maternal age (years)	19	32	25
Gravidity	2	6	2
Number of living children	1	4	Nil.
Miscarriages	Nil.	One at three months.	One at two months.
Complications of pregnancy	Nil.	Ante-partum hæmorrhage at 34 weeks.	Uterine hæmorrhage at 8 weeks, lasting one day.
Delivery	Breech extraction.	Left occipito-posterior position; unassisted.	Normal; left occipito-anterior position.
Gestational age at birth	34 weeks.	38 weeks.	34 weeks.
Birth weight (grammes)	1700	3630	1900
Duration of life	Half an hour.	10 minutes.	24 hours.
Clinical cause of death	Prematurity.	*Asphyxia livida.*	Atelectasis in premature infant.
Sex	Female.	Female.	Male.
Associated congenital abnormalities.	Absent vagina and uterus. Hare-lip. Webbing of skin of neck. Deformity of external ears. Bilateral talipes. Pilonidal sinus.	Absent vagina and uterus (Fallopian tube and ovary present).	Nil.
Lung weight (grammes)	8	24	18
Lung weight for normal infant of same size (grammes)	33	58	46
Further abnormality contributing to death discovered by autopsy.	Coarctation of the aorta (infantile). Renal agenesia.	Renal agenesia.	Hyaline membrane in alveoli. Renal agenesia.

The mothers of the infants were interviewed with regard to family history and detailed history of the pregnancy. The family history was of no significance. One mother had no ante-partum disturbance of pregnancy, but the other two had some early environmental disturbance. One mother (Case III) had a uterine hæmorrhage at the eighth week of pregnancy which lasted for one or two days and was brought on, she thought, by her occupation as shop assistant, which required her to stand all day and at times lift heavy drawers. A previous miscarriage had occurred at eight weeks some twenty months before, and this infant was much desired, as she had no living child. The threatened abortion was treated by rest in bed with phenobarbital sedation and three injections of progesterone on alternate days. The other mother (Case II) had four living children. She had taken a large number of tablets of three varieties (presumably of supposed abortifacients) over a considerable period of time, approximately one month, early in pregnancy. (One of these was an emmenagogue containing iron, aloes and apiol.) No uterine hæmorrhage resulted, and the pregnancy had continued undis-

turbed until an ante-partum hæmorrhage one month before delivery.

The fact that two of the three subjects had early environmental disturbance may appear significant. However, it is well known that post-hoc deductions concerning congenital defects are particularly apt to be misleading on account of the frequency of minor disturbances in the course of pregnancy.

Acknowledgements.

I wish to thank Dr. A. D. Packer for the autopsy notes on Cases I and II, Dr. T. O. R. Yates, Medical Superintendent of the Queen Victoria Maternity Hospital, for permission to publish this report, and Dr. B. E. Wurm, Dr. L. O. S. Poidevin and Dr. R. Heighway for permission to refer to the clinical records of the mothers.

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INTUSSUSCEPTION OF MUCOCELE OF THE APPENDIX.

By DONALD D. BEARD,
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Clinical Record.

THE patient was a married woman, aged thirty years, who had four children. For two days she had had vague generalized abdominal pain, present continuously; but it did not prevent her from sleeping or from eating normal meals. On the morning of her admission to hospital the pain became worse and was localized to the right lower quadrant of the abdomen and associated with nausea. She vomited twice, with temporary relief of pain, but it soon recurred with increased intensity and was somewhat colicky in nature. There had been some diarrhœa during the day, six watery motions without blood or slime being passed. She also complained of a frontal headache. There had been no previous attack.

On examination of the patient, her temperature was 99° F. and her pulse rate 112 per minute. Her tongue was furred. The abdomen moved well in all areas on respiration. Direct and rebound tenderness was present in the right iliac fossa, being maximal over McBurney's point. There was no rigidity. A vague mobile mass approximately two inches in diameter could be felt beneath the area of tenderness. Rectal examination elicited fingertip tenderness high up on the right side.

A provisional diagnosis of acute appendicitis was made; it was thought that possibly the appendix was wrapped in a mass of omentum.

At operation a long, grossly swollen, pale appendix was found, and within the caecum a firm fluctuant ball approximately two and a half inches in diameter was felt. This was mobile, except that it seemed to be fixed by a small area near the base of the appendix, which appeared to be intussuscepting into the caecum. After the surrounding intestines had been packed off, the base of the appendix was incised and a considerable amount of gelatinous fluid escaped, with a diminution of the size of the intracaecal mass. The appendix was then removed, together with a small area of caecal wall and the dilated base of the intussuscepted appendix. The wound was closed without drainage.

Examination of sections of the tissue removed revealed an absence of the normal layer of lymphoid tissue in the submucosa. There were remnants of columnar mucin-forming epithelium which appeared to rest directly on a fibrous layer of tissue. There were distended lymphatic channels in the submucous layer of the mucous membrane surrounding the opening into the caecum, with inflammatory reaction in the caecal mucosa. At the point of obstruction at the base of the appendix were several nests of degenerating mucin-forming cells surrounded by chronic inflammatory cells and fibrosis.

In the accompanying photograph (Figure I) the appendix can be seen partly intussuscepted into the caecum, a section of the wall of which surrounds the ball which had been deflated at operation. Even then it had been impossible to reduce it.

FIGURE I.

Discussion.

Intussusception of the appendix from all causes is rare, but when intussusception is associated with mucocele it is rarer still; only seven cases had been reported up to 1949, the first by McLennan in 1919. (The first case of intussusception of the appendix was published by McKidd in 1859.)

With regard to the ætiology, it is interesting to note that simple intussusception of the appendix occurs most commonly in children, whereas intussusception associated with mucocele has been reported only in adults of the average age of thirty-five years. The explanation may be found in Phemister's view (quoted by Morgan, 1937) that mucocele is associated with what he calls "the normal involution of the appendix", which occurs between the ages of thirty-five and fifty years, that being the period at which retrogression and obliteration of the lumen of the appendix commonly occur. This involution does not occur in everyone, as little change with age is noted at operation. However, the appendix certainly behaves in a

different manner with increasing years, appendicitis then being more rapid in development and more severe in form. If this involution occludes the appendiceal lumen near its base while the mucosa distally is still secreting, mucocele of the appendix may follow. The stricture may also be caused by an attack of appendicitis near the base, followed by fibrosis. Once the mucocele has developed and the tension within it rises, the thin diaphragm at its base will tend to be pushed into the lumen of the caecum. Intestinal peristalsis then tends to "milk" the appendix in, and if allowed to continue may drag the caecum in with it.

Acknowledgement.

I should like to thank Mr. Ian Hamilton for permission to publish this case.

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Reviews.

Spinal Epidural Analgesia. By P. R. Bromage, M.B., B.S. (London), F.F.A.R.C.S., D.A.; 1954. Edinburgh and London: E. and S. Livingstone, Limited. 9″ × 6″, pp. 130, with 41 illustrations. Price: 15s.

A CONCISE ACCOUNT of the interesting technique of spinal epidural analgesia is long overdue. To quote the author: "During the last half-century a great deal has been written about epidural analgesia, but it is widely scattered through the literature, and to the beginner seeking confidence in the experience of others the task of appraising the technique is formidable."

This little book deserves a place in every anæsthetist's library. It is a pleasure to read the author's clear, concise English; his approach to a rather controversial subject is sound and well reasoned; his assessment of techniques and apparatus, even of those which do not appeal to him, is fair and balanced. The opening chapters, on history, and on anatomical and physiological considerations, are excellent and clearly illustrated. Production and print are good, and a very valuable feature is a most extensive bibliography which concludes each chapter.

Criticisms are few and minor. There is some want of specificity in mentioning strengths and quantities of drugs, while in describing the properties of the various local analgesic drugs it would seem to be wise to indicate relative and absolute toxicity. We feel that perhaps the indications for this technique might have been a little more conservatively assessed; but all the same, this is a book to be recommended.

Congenital Heart Disease: An Illustrated Diagnostic Approach. By Henry S. Kaplan, M.D., and Saul J. Robinson, M.D.; 1954. New York: McGraw-Hill Book Company, Incorporated. 11″ × 8½″, pp. 138, with 146 illustrations. Price: $12.50.

THE authors have produced a book which will be valued by pædiatricians, physicians and radiologists alike.

It is produced in two parts. The first section, termed "Orientation" by the authors, deals with the clinical aspects, laboratory procedures, radiological examinations, and electrocardiographic investigations. The presentation is lucid and the need for integration of the clinical with the specialist investigations is stressed. The authors advise that the referring physician should always be present at the fluoroscopic examination of his patients, an arrangement which all will agree is desirable.

It is of interest to see the value placed on the clinical examination and to find such useful clinical observations scattered through the text, as, for instance, that the asthenic child who is thin and looks chronically ill has probably an interatrial septal defect, that the child with aortic coarctation is usually robust and plethoric, and that this latter condition is the most common cause of congestive cardiac failure in infancy.

The Röntgen examination is admirably described and profusely illustrated. In the section on electrocardiographic diagnosis of chamber hypertrophy, the authors stress the value of the unipolar electrocardiogram and give a helpful summary of its features in infancy and childhood. Angiocardiography is excellently described and its value and dangers are discussed in a well-illustrated chapter. Retrograde thoracic aortography, via the left brachial artery, is recommended as a measure which is safer and often more useful than angiocardiography. Cardiac catheterization is described and the information to be gained from it as well as its dangers is discussed. The new procedure of ballistocardiography and electrokymography are mentioned.

In the chapter on treatment, surgical and medical treatment is considered. The conditions in which the practicable operative procedures are available are listed—namely, patent *ductus arteriosus*, coarctation of the aorta, tetralogy of Fallot and pulmonary stenosis with intact ventricular septum. In complete transposition of the great vessels, occasional patients have been successfully operated upon, and in operation for aortic and subaortic stenosis, ventricular fibrillation has frequently been fatal. Two patients with anomalous opening of the pulmonary veins have been treated surgically with success. Gross's "well method" of patching septal defects is still in the experimental stage. The authors point out the obligation on the physician to treat all patients, so as to keep them as medically fit as possible. It is always possible that types of lesions which today are considered inoperable may come within the surgeon's scope as research and new skills develop. Wise advice is also given on the general management and education of the child with a congenital cardiac defect.

Section II takes the form of an atlas divided into the cyanotic and acyanotic congenital lesions. This is set out in a most satisfactory manner. On one page are listed the anatomical, circulatory, clinical, radiographic and electrocardiographic features in tabular form, with a résumé of laboratory findings, special diagnostic procedures of choice and surgical treatment. On the facing page are reproductions of X-ray films, each one with a semi-diagrammatic interpretative drawing. The result is the presentation of much condensed information in an easily assimilable form.

The book is excellently produced throughout. In a field which is becoming more intricate as knowledge increases, the authors have done practitioners real service in producing in 117 pages a compendium of up-to-date knowledge on the subject.

Prefrontal Leucotomy and Related Operations: Anatomical Aspects of Success and Failure. By Alfred Meyer, M.D. (Bonn.), and Elizabeth Beck; 1954. Edinburgh and London: Oliver and Boyd. 10″ × 7½″, pp. 64, with 20 illustrations. Price: 10s. 6d.

THIS is a first-rate publication and it has been produced at the right time.

The most unsatisfactory aspect of leucotomy and such procedures has been that destructive surgery has been carried out upon a region of the brain where the physiology and even the anatomy are incompletely understood. In fact, it is fair to say that had it not been for the fact that in the majority of cases there was something to gain and nothing to lose by employing a surgical operative treatment, many fewer patients would have been submitted to leucotomy. This has resulted in a great deal of inaccurate work being done, and in association with this there has been much inaccurate observation of the results.

The appearance now of publications, the object of which is to introduce knowledge and precision where ignorance and inaccuracy have existed, is an important step. With the reports of such people as Spiegel and Wycis in America, who describe their more accurate technical operative methods, we now have such a book as the present one, in which from material collected at the Maudsley Hospital an endeavour has been made to associate the anatomical lesion with the clinical effect, in a varying group of patients.

The series of cases is a large one to be so dealt with; but it is even so a relatively small number, in view of the large number of variables in the equation which is being solved. However, the material has been studied so clearly and tabulated so well that the conclusions that have been drawn or suggested by the authors in this book can fairly be derived from this material. These conclusions are of great interest, and of practical significance, too, in that they

make a contribution to the knowledge of the usefulness of these procedures, and offer suggestions as to which of the procedures merit further study.

As the authors state, the study of this material is likely to shed light upon the anatomy and physiology of the frontal lobe. It may be pointed out that study of this material has another valuable service to render the surgeon in his constant association with patients who have sustained a head injury both recently and in the past. The widespread effects in the brain from a local injury, as described in these papers, are very important in the study of such cases.

The authors are to be congratulated on deciding to produce this book, and on the clarity and economy of verbiage with which they have done it.

Legal Medicine. Edited by R. B. H. Gradwohl, M.D., Sc.D., F.A.P.H.A., Commander, M.C., U.S.N.R. (Retired); 1954. St. Louis: The C. V. Mosby Company. Melbourne: W. Ramsay (Surgical), Limited. 10" × 7", pp. 1110, with 222 illustrations. Price: £10 10s.

THIS work is an extremely comprehensive one, as might be expected from the imposing list of contributors, which includes a lecturer in forensic medicine, a professor of pathology, a toxicologist, a coroner, a professor of neurology and psychiatry and a clinical professor of medicine. These contributors come from many States in the United States of America as well as two from England, and one comes from Scotland. The best known of the last group is probably Sir Sydney Smith, Dean of the Faculty of Medicine at the University of Edinburgh. As each writer confines himself largely to his own particular specialty, there is little of that confusion which only too often exists in an "omnibus" volume of this type. A much wider range of matter is covered than usual, and emphasis is placed on the increasing importance of alcohol in legal medicine. The highly controversial questions of narco-analysis and the lie detector are discussed; but it cannot be agreed that either is reliable or even desirable. To the British mind they savour somewhat of trickery, and no court would accept the results as evidence, particularly against the accused. The theory and method of application of each are described in some detail. This thoroughness of detail also applies to all other methods of investigation mentioned in the book. An exceptionally wide field is covered by this work, and it would prove an invaluable source of reference to all those people whose duties bring them into contact with medico-legal problems. Its greatest value, presumably, would be to the government medical officer or government pathologist who is concerned with autopsies or the analysis of body fluids or stomach contents. However, there are very interesting sections on malpractice and negligence, trauma and workers' compensation, rape and paternity blood tests, which could be read with benefit by any medical practitioner. There is even a section on forensic psychiatry. Unfortunately, many of the legal principles enunciated are specific to the United States of America and are therefore only of academic interest here. In spite of this, large portions of this book can be read for their interest alone, as it is exceptionally well written. One does not often find within the scope of one volume so much authoritative material. Its greatest value lies in the fact that each chapter is complete in itself, and there is little necessity to consult any other work on that particular subject. "Legal Medicine" is in effect a complete course compressed, but not condensed, into one volume. The only criticism which can be made is that too much space has been devoted to the laws in the different States on abortion (30 pages) and authorization for autopsy (40 pages). Even this criticism hardly stands, as the book has been written primarily for the United States market.

Recent Advances in Dermatology. By W. Noel Goldsmith, M.A., M.D. (Cantab.), F.R.C.P. (London), and Francis F. Hellier, O.B.E., M.A. (Cantab.), M.D., F.R.C.P. (London); Second Edition; 1954. London: J. and A. Churchill, Limited. 8" × 5½", pp. 472, with 33 illustrations, five in colour. Price: 42s.

AN interval of eighteen years has elapsed since the first edition of "Recent Advances in Dermatology". The original author has been associated in this second edition with Dr. F. F. Hellier, of Leeds. A new edition is long overdue, and surely it is not asking too much of British dermatologists to expect an up-to-date review every few years.

It is not possible in a short survey to comment on many aspects of this work; however, the chapter headings are quoted *seriatim* in order that anyone interested may have some idea of its contents: metabolism, vascular disorders, the collagnoses, nervous and psychological influences, endocrine glands, vitamins, affections of the reticular tissue, allergy, fungous infections, virus diseases, industrial dermatitis, radiant energy, miscellaneous, therapeutic agents. There are, as is to be expected, a few omissions, the outstanding one being the absence of reference to chloroquine in the treatment of *lupus erythematosus*. This is much safer and less disfiguring than mepacrine. Kerato-acanthoma, a benign form of neoplasm, has been "by-passed", although it is now becoming more easily recognized. The chapter on radiant energy is of great interest to Australian dermatologists and radiotherapists. It is doubtful whether many would agree with the statement on page 362 that "relapsing dermatoses can be treated as often as it is called for with Grenz rays". Is there complete agreement that *Grenz* rays can be correctly calibrated? Some prominence might have been given to the studies of J. C. Belisario on the erythema dose in superficial X-ray therapy.

This book is well written and full of information, and contains excellent illustrations. It is recommended to the advanced student in dermatological practice.

Why We Became Doctors. Edited by Noah D. Fabricant, M.D.; 1954. New York: Grune and Stratton. 8½" × 6", pp. 192. Price: $3.75.

AN experienced medical journalist, Dr. Noah D. Fabricant, has ingenuously undertaken the editorial work for a collection of short extracts from the published writings of fifty doctors, in which they have indicated some of the psychological and circumstantial factors that influenced their determination to enter the medical profession.

For the most part these autobiographical effusions are uninspiring, rather egotistical and sometimes almost trite. On wearily reaching the last chapter, one could not help recalling the downright sentiments expressed in a recent issue of this journal by an eminent practitioner whose life-story many would be curious enough to read. This is what he had to say about the generality of autobiographies: "They are a sort of vicarious outlet for internal musings on the past—not always clever, correct or truthful—of mediocre minds; just the small beer of nobodies, and, I repeat, often owing their origin to sheer vanity."

In giving their reasons for embracing a medical career, the woman doctors write more objectively and explicitly than their colleagues of the stronger sex. Elizabeth Blackwell, the first woman to break through the barrier, leaves the reader in no doubt as to the real motives which gave her enough courage to set out upon a long crusade. Then again, an occasional contributor is entertaining for the subtle humour infused into his reminiscences, or in a few instances, for the whimsical way he has of relating the youthful adventures which ended happily and unexpectedly in a medical school.

Fluid Balance in Surgical Practice. By L. P. Le Quesne, M.A., B.M., B.Ch. (Oxon.), F.R.C.S. (England); 1954. London: Lloyd-Luke (Medical Books), Limited. 9" × 5", pp. 138, with 41 illustrations. Price: 17s. 6d.

THIS monograph is based on the Moynihan Prize Essay for 1953. The author first outlines the physiology of body fluid distribution, and gives a summary of his own investigations into the effects of surgical operations on body fluid distribution and composition. He shows that after operation there is an inevitable period of sodium retention and also of water retention lasting for several days, and this must be allowed for in the interpretation of results of intravenous therapy. These changes are probably due to three factors—namely, a secretion of antidiuretic hormone by the pituitary, a secretion of adrenocortical salt-retaining hormone, and renal hæmodynamic factors.

The practical conclusion from these studies is that it is easier, and safer, to correct fluid imbalance before operation rather than afterwards, and that the use of the intravenous route is not a simple alternative to oral feeding. Intravenous therapy may be highly dangerous to the recipient in the few days after operation. The danger of overloading the patient with salt during this period is well known. Less well known is the danger of overloading him with simple glucose-water solutions. Post-operative deficiency of potassium salts has come to be recognized as common but avoidable. The basic post-operative intravenous intake for an adult should consist of three litres of water, 4·5 grammes of sodium chloride and 6·0 grammes of potassium chloride, except in the first twenty-four hours, when only two litres of fluid, without potassium, should be given.

The method of assessing and correcting pre-operative dehydration is studied in the second part of the book, and a short chapter is devoted to special problems in childhood.

XUM

The author is to be congratulated on presenting a useful summary of present knowledge about this difficult problem, and his preliminary quotation from Conan Doyle is particularly apt: "These are much deeper waters than I had thought."

A Synthesis of Human Behavior: An Integration of Thought Processes and Ego Growth. By Joseph C. Solomon; 1954. New York: Grune and Stratton. 8¾" × 6", pp. 278, with three text figures. Price: $5.50.

THIS is an up-to-date and readable book which can be recommended to any student interested in the dynamics of human behaviour. Though it is concise and clearly written, it does not claim to be packed with new material or to reveal any startling discoveries. Such claims as it may have in the realm of originality are small, though it boasts of a "Table of Ego Organisation" which is both new and explicit, a difference in small matters from the teachings of Mélanie Klein and the suggestion that a baby can frighten itself by its own crying. The main thing is, as the author points out, that it is a synthesis and not an analysis. It builds a map of conduct from infancy to old age in a manner which is balanced and broadened by the fact that its author has had practical experience not only in psychoanalysis but in pædiatrics, child guidance and hospital psychiatry. It is naturally Freudian in essence and in orientation, though not so slavishly doctrinaire as to omit the ideas of others or clinical observations of the author's own making. Many people have written about the psychology of childhood, searching for gold in the alluvial deposits of the Œdipal age; but fewer seem to have concerned themselves with the behaviour problems of later life. It is here, especially, that Dr. Solomon succeeds in writing some interesting chapters. He is one who believes that human behaviour is modifiable even in old age. Indeed, with man's increasing longevity, psychiatrists are almost forced to study the social aspects of senility. Lear's tragedy is perennial.

The Digestive Tract in Roentgenology. By Jacob Buckstein, M.D.; Second Edition; 1953. Philadelphia: J. B. Lippincott Company. Sydney: Angus and Robertson, Limited. Volume II: "The Small Intestine, The Large Intestine, Herniation and Eventration of the Diaphragm, The Gallbladder and the Bile Ducts, Spleen, Liver and Pancreas." 10" × 7¼", pp. 664, with 471 illustrations. Price (two volumes): £13 8s. 9d.

THE second volume of this work by Jacob Buckstein has been received for review; the first volume has not yet been received. The present volume covers the small and large intestines, the gall-bladder, spleen and pancreas. The work is that of a man with wide and extensive knowledge and with thirty-three years of experience in gastro-intestinal radiology in one of the largest American hospitals. The section on the small intestine is of particular interest as so much work is now being done in the investigation of this organ. The anatomy and physiology are considered in detail and the author refers to the constantly changing position of the various coils as shown in films. A barium sulphate and water mixture is used and 14 by 17 inch films are taken every fifteen minutes for an hour, and these are followed by films at three, five, six, nine and twenty-four hours. Fluoroscopic examinations are also essential. The films are developed as taken and any permanent deformity is noted. This complete examination adds greatly to the expense of the procedure. Alterations in the mucosal pattern occur in many conditions such as steatorrhœa, scleroderma and others. Besides Meckel's diverticula many others occur and all are well illustrated. Herniation and volvulus of coils cause distension with, in many cases, fluid levels in the coils. In mentioning regional ileitis the author points out that recurrence may occur after very extensive resection of the gut. Tumours are rare, but many cases are reported and illustrated. The large intestine is examined with both a meal by mouth and an opaque enema. For enema examinations the author follows orthodox methods. The introduction of air after preliminary evacuation of the opaque enema is often of great help, especially in cases of polypus. A good description is given of the "mass movements" of the contents of the large bowel. The author warns his readers against labelling an appendix which fails to fill as being pathological. The meal by mouth is better than the enema for portraying the appendix. The author supports Keith's theory that stasis is due to an upset of the conduction mechanism with pathological alteration of the nerve plexuses of the bowel. In the study of megacolon a bowel washout should be given after evacuation owing to the large volume of barium mixture used. The author points out that in many cases of megacolon the rectum remains unaffected. Volvulus of the colon is usually confined to the sigmoid colon. Every conceivable condition of the pathological colon is considered in detail and the illustrations are excellent. The author considers that most cases of herniation through the diaphragm are of developmental origin. The methods of examination of the gall-bladder follow the usual line and a preliminary film should always be taken. The author has had considerable experience in cholangiography through fistulous openings and during operations on the biliary tract. The spleen when pathologically enlarged may cause pressure defects on other organs; phleboliths and calcified areas are frequently seen and are often due to calcified hydatid cysts. The author considers that "Thorotrast" is too dangerous to use for outlining the spleen except in exceptional circumstances. In disease of the pancreas stress is laid on the displacement of the duodenal loop with irregularity of the duodenal mucosa and other alterations in the gastric outline. Calcified areas are common in pancreatic disease and many good cases are described and illustrated. Pneumoperitoneum is sometimes of value in demonstrating the size and shape of the liver and spleen. It is also possible at times to display pancreatic cysts. The pancreatic duct may at times be demonstrated during cholangiography or even by direct injection through the ampulla of Vater. This work is a most valuable one and should be in the hands of every radiologist. The illustrations are of the highest quality and are most illuminating.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"The Medical Clinics of North America"; 1954. Philadelphia and London: W. B. Saunders Company. Melbourne: W. Ramsay (Surgical), Limited. Boston Number. 9" × 6", pp. 314, with seven illustrations. Price: £6 *per annum* with paper binding and £7 5s. *per annum* in cloth binding.

This is a Boston number. It consists of a symposium on specific methods of treatment on 17 subjects, with Chester S. Keefer as consulting editor. There are two additional articles on the status of immunization in 1954 and on cardiac disturbance of emotional origin.

"Textbook of Operative Surgery", by Eric L. Farquharson, M.D., F.R.C.S. (Ed.), F.R.C.S. (England); 1954. Edinburgh and London: E. and S. Livingstone, Limited. 10" × 6¾", pp. 862, with 623 illustrations, a few in colour. Price: 75s.

Designed to present the whole subject of operative surgery in balanced perspective from the viewpoint of the general surgeon in training.

"Goodbye Harley Street", by R. Scott Stevenson; 1954. London: Christopher Johnson. 8½" × 5½", pp. 224. Price: 15s.

A book of reminiscences.

"Operation Rangoon Jail", by Colonel K. P. MacKenzie, R.A.M.C. (Retd.), with a foreword by Brigadier J. G. Smyth, V.C., M.C., M.P.; 1954. London: Christopher Johnson. 8½" × 6", pp. 202, with 18 illustrations. Price: 15s.

The author writes of his personal experience as a prisoner of war.

"The Principles and Practice of Medicine: A Textbook for Students and Doctors", by L. S. P. Davidson, B.A., Cantab., M.D., F.R.C.P., Ed., F.R.C.P., London, M.D., Oslo, and the staff of the Department of Medicine, University of Edinburgh, and associated clinical units; Second Edition; 1954. Edinburgh and London: E. and S. Livingstone, Limited. 8½" × 6", pp. 1048, with 75 illustrations. Price: 32s. 6d.

Based on a set of lectures delivered annually to students by members of the department of medicine.

"Health for Effective Living: A Basic Health Education Text for College Students", by Edward B. Johns, Ed.D., F.A.P.H.A., Wilfred C. Sutton, Ed.D., Lloyd E. Webster, M.A., adviser and consultant, and Walter H. Brown, M.D., with a foreword by Bernice Moss, Ed.D.; 1954. New York: McGraw-Hill Book Company, Incorporated. 9" × 6¾", pp. 492, with 59 illustrations. Price: $4.75.

Designed for the student—to give him an understanding of effective living, an opportunity to appraise his needs and interests, and to help him to meet them.

The Medical Journal of Australia

SATURDAY, JANUARY 8, 1955.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

THE MINISTER DISCUSSES THE INSURANCE SIDE OF THE NATIONAL HEALTH SERVICE.

MEDICAL PRACTITIONERS throughout the Commonwealth of Australia know by now that the scheme of national health service, devised by Sir Earle Page and in being throughout the Commonwealth, has been the admiration and the envy of other countries. The enthusiasm with which the measure was received by the World Medical Association in Stockholm three years ago was remarkable. Moreover, at the recent general assembly of the World Medical Association at Rome one of the delegates from a European country stated unequivocally that only Australia and Sweden had national health services worthy of the name. The characteristic which has commended the scheme to other communities is the fact that it is a means whereby the people are taught to help themselves and are not allowed to rely solely on the munificence of a paternal government. The self-help which has been imposed on the community must always be kept well to the fore in any discussion on national health service in this country. With this object in view, we propose to quote some remarks made by Sir Earle Page, the Minister for Health, at the opening of the new building at Jamison Street, Sydney, for the Medical Benefits Fund of Australia, Limited. *The opening took place on November 13, 1954.*

The Minister referred to the rapid progress of the hospital insurance service. He said that in the three months ended September, 1952, Commonwealth hospital benefits were paid in respect of 425,000 patient bed days; in the corresponding quarter of 1953, that figure had reached 1,218,000, while in the present year, 1954, the figure for the corresponding quarter was 1,726,000. This indicated that in 1954-1955 about thirty shillings per day for 7,000,000 hospital bed days would be paid for by combined hospital and fund benefits. In other words, approximately £10,000,000 worth of hospital fees would have been paid from this source. The Minister pointed out that a similar spectacular increase had been recorded in respect of insurance in medical benefits. The Government and insurance funds, he said, were at present paying combined benefits for eight to ten million individual medical services each year, with the figures increasing rapidly each quarter. These figures did not include the five million concessional pensioner medical services provided by the Government. By these measures, at least £10,000,000 were already being paid each year for medical services.

Two danger points in this scheme were emphasized by the Minister. The first was the question of the margin of fee to be paid by the patient, and this had to be dealt with by the members of the medical profession; the second was the question of exclusion from benefits, and had to be dealt with by the medical benefit organization. He insisted that the margin that the patient paid to the doctor in addition to the combined benefits had to be reasonable and in the patient's financial compass. He also emphasized the view that exclusions of the organizations from their benefits had to be kept to the minimum. The Government's benefit was automatically given to every insured person, whether the insurance organization paid the benefit or not. The medical benefits scheme of Australia was in the nature of an experiment in social medicine, and since it was an experiment, the eyes of the world were on it. The basis of the scheme was universally recognized to be fundamentally sound. Its continued success, however, was dependent upon the restraint exercised by the parties most directly concerned in its operation, mainly the many members of the medical profession and the registered organizations. Both of these had been given great legal powers to control matters that came within their orbit. The Minister referred to a comment which he had recently received from a leading medical practitioner in New Zealand. This was almost identical with a similar statement from the United Kingdom and illustrated the interest that was being taken overseas in the Australian scheme. The writer stated:

> May I offer a little constructive criticism. The support of the Australian people to your health scheme would appear to me to depend now on one important factor—that the amount the insured person has to pay directly to the doctor should not be at too high a level, say 10% or at most 20%. If you can achieve this, and avoid frustration among the people, then I feel that your scheme will be adopted eventually all over the world.

The Minister went on to say that the problem of the margin to be paid directly by the patient was undoubtedly one of the most important of those still remaining to be solved. The problem had to be solved spontaneously by the considered action of the organized medical profession. Some margin of the fee to be paid by the patient had been found to be indispensable for the prudent and successful control of the scheme and the prevention of abuse. The margin had to be large enough to prevent abuse, but it

had not to be so great as to impair the value of the scheme by leaving too much to be paid by the patient. The Minister said that the problem of the margin was inherent in voluntary health insurance in a democratic society and was one which was being encountered in the United States. Some four to five months before, the outgoing President of the American Medical Association, in a report to the Association's House of Delegates, had warned American doctors that they could no longer base their medical fees on the basis of a patient's salary, social position or living standard. He had urged the profession to adopt average fee schedules which would allow health insurance companies to quote rates geared to definite medical charges. The President had pointed out that establishment and posting of average fee schedules would enable policy holders in health care plans to know how much they would have to pay to supplement insurance benefits. In his opinion, the adoption of an average fee schedule would, in large measure, eliminate complaints of patients. The Minister said that the comments quoted by him, coming as they did from a medical practitioner of high status in the United States, were worthy of earnest consideration in relation to the Australian scheme. The medical profession of Australia had, during the brief period of operation of subsidized medical insurance, shown itself to be a thoroughly responsible body, well aware of the need to stabilize fees, and under legislation had been given great powers to handle its own internal problems. The Federal Council of the British Medical Association of Australia had repeatedly issued warnings against the danger of increases in medical charges which would destroy the value of the medical benefits scheme. The Minister was happy to say that the great majority of doctors were following this advice.

The medical profession of Australia has set its face against nationalization by any type of government. As long as the present health scheme is functioning successfully, no nationalization will be attempted by any government. The medical profession must do all in its power to further the present type of health service—in other words, by giving a faithful service at the present time it will be assuring its own freedom in the future. No person with any sense will deny that the freedom of the medical profession is essential to the health and well-being of the community as a whole.

Current Comment.

BENIGN AND MALIGNANT TUMOURS OF THE RECTUM.

IN a recent issue of this journal reference was made to the long-term results of operation on the rectum for malignant disease. At the same time, certain aspects of the symptomatology were mentioned. Although it is something like putting the cart before the horse, it is thought that attention might be directed to the occurrence of polypi in the colon and rectum, because it is in these structures that malignant disease so often originates. In his book on the pathology of tumours, R. A. Willis describes the causative factors of carcinoma of the large intestine under three headings. The first is intestinal polypi, the second is inflammatory diseases, and the third is the possible presence of ingested carcinogens. Discussing intestinal polypi, he points out that the tumours may be solitary, few, many or innumerable. The rectum and pelvic colon are the commonest sites of solitary or few polypi and are often the most heavily affected parts when many growths are present. Polypi are not congenital, but usually commence to appear between the ages of fifteen and twenty-five years. Willis states that all polypi of the large intestine—whether numerous, few or single, whether they are familial or not—are predisposed to carcinomatous change, the predisposition being least in the solitary polypus and greatest in familial polyposis. He then goes on to discuss the evidence for this statement under three headings. The first is familial polyposis terminating in cancer; the second is carcinoma often accompanied by polypi; the third is carcinomatous change in progress in a polypus. We need not spend a great deal of time considering the familial polyposis which terminates in cancer. Willis quotes a typical example and he also points out that widespread polyposis is not always familial. He states that the victims of familial polyposis are almost certain to die of carcinoma of the rectum or colon at an early age, usually between twenty-five and forty-five years. Willis states that carcinoma was accompanied by polypi in 27% of 79 necropsy cases examined by Stewart in 1931, and in no less than 25 of 33 consecutive cases of rectal and sigmoid carcinoma examined by Dukes in 1926. In a consecutive series of 40 operational necropsy specimens of carcinoma of the large bowel examined by himself polypi were found in 24; they were multiple in 18 and were usually in the neighbourhood of the main growth. These findings, he declares, show that intestinal carcinoma commonly arises in a field of predisposed mucosa. The extent of the potentially neoplastic field varies greatly; it may be restricted to a local segment or it may involve the whole large intestine as in widespread polyposis. Under his third heading, Willis points out that Swinton and Warren concluded that an origin from polypi was demonstrable in 14% of 827 cases of colonic and rectal carcinoma. Willis has seen carcinomatous change develop in a polypus which presented in a sigmoid colostomy opening of a patient with inoperable carcinoma of the rectum.

The occurrence of malignant disease in rectal polypi was well illustrated in an article by H. E. Lockhart-Mummery published in 1952.[1] In this article, the notes on the pathological aspects are written by Cuthbert E. Dukes and some interesting and valuable diagrams and photomicrographs appear in the article. It will well repay perusal. The occurrence of malignant change in rectal polypi was discussed by C. E. Welch in the course of an editorial written in 1951.[2] Welch discusses sessile and pedunculated polypi. He remarks that malignant changes are popularly supposed to be associated only with the sessile group. He admits that differentiation of the two types is often difficult and that an apparent stalk is only the mucous membrane displaced by the peristaltic pull of the polypus. The idea that cancer does not occur in pedunculated polypi is incorrect. He reports that of 70 single polypi in the colon or rectum removed in the Massachusetts General Hospital in the previous twelve months, all of which were believed by observations through a sigmoidoscope or through a colotomy incision to be benign, eleven were shown by the microscope to contain cancer.

In a recent study of the causal relationship between benign epithelial tumours and adenocarcinoma of the colon and rectum, K. A. Hultborn[3] describes different types of benign epithelial tumours of the large bowel. He describes benign epithelial tissue in direct continuity with carcinoma, and this, he states, suggests that the malignant tumour has developed from the benign tumour. At the same time, he thinks it possible that the benign epithelial tumour and the carcinoma have developed at the same site independently of each other, or that the former was not originally in direct continuity with the latter but became so during growth. He refers to suggestions by

[1] *Lancet*, October 18, 1952, page 751.
[2] *Surg., Gynec. & Obst.*, Volume 93, September, 1951, page 368.
[3] *Acta radiol.*, Supplementum 113, 1954.

various authors that secondary changes may arise in the mucous membrane adjacent to a carcinoma. In his opinion, the benign epithelial changes associated with carcinoma which he calls benign epithelial tumour do not consist of carcinoma growing in the mucosa, and he thinks that this is evident from the biological dissimilarity manifested in differing radiosensitivity. He has often observed during radiotherapy how the typical cancer crater with its raised edges has levelled off and shrunk, whereas the coexistent benign epithelial tumour has remained unchanged. He gives illustrations of a case in which the carcinoma cells were completely destroyed and the benign epithelial tumour, on the other hand, showed only very slight radiation changes or none at all. He thinks that if an adenocarcinoma responds to irradiation, the persisting precancerous condition in the mucous membrane may give rise to a new carcinoma independently of the previous one. He makes what some people may regard as an unusual suggestion when he remarks that since the ætiology of benign tumours is unknown, the possibility can scarcely be denied that carcinoma may induce in the surrounding mucosa changes identical with benign epithelial tumour. He points out, however, that there is a good deal of evidence to the contrary, and concludes that the changes which he regards as benign epithelial tumour are primary and are not induced by the carcinomata.

Hultborn, at the end of his article, deals with the clinical side of the subject. For practical purposes, he divides polypoid tumours into those which are within and those which are beyond the reach of the sigmoidoscope. He states that polypoid tumours within the reach of the sigmoidoscope producing clinical symptoms should be removed. Such tumours which do not produce clinical symptoms and which are accidentally discovered should, he thinks, also be removed, for by removing them a certain degree of cancer prevention is carried out. The risk of malignant transformation of benign epithelial tumours is greatest in the rectum where only 20% of benign epithelial tumours occur, but more than 50% of the carcinomata are found. R. J. Jackman and C. W. Mayo, in the course of an investigation of adenoma-carcinoma sequence in cancer of the colon,[1] found that 70% of carcinomata and of polypi of the colon were within reach of the sigmoidoscope, and we may incidentally record the fact that J. C. Lawrence,[2] in an investigation of 7000 cases, found that polypi were twelve times commoner in the colon than they were in the small intestine. The conclusion would appear obvious that in every case in which the rectum and sigmoid are being investigated in regard to the possible presence of tumours, sigmoidoscopic examination should be part of the regular routine. The type of operation which should be undertaken may possibly give rise to some argument. Some polypi of the rectum have been removed through the sigmoidoscope, and Welch has stated that when this is done because radical operation is inadvisable, the operative field can at least be kept under observation by repeated sigmoidoscopic examination. He refers to an observation by McLanahan *et alii* that 25% of such patients will develop a local recurrence. Welch states that simple polypectomy through a colotomy incision has been the operation chosen by many surgeons. In his opinion, it should be replaced by segmental resection. The examination of biopsy specimens for the grading of tumours has not been mentioned, but this is precluded by lack of space. In polypoid tumours which are beyond the reach of the sigmoidoscope, the surgeon has to rely on X-ray diagnosis and the use of barium enemata. Hultborn points out that with a meticulous technique an increasing number of small tumours may be detected. At the same time, he thinks that in routine practice only a minor proportion of the great number of small polypoid tumours beyond the reach of the sigmoidoscope can be detected. He states that when non-symptom-producing polypoid tumours of the colon beyond the reach of the sigmoidoscope are accidentally discovered, the surgical risk must be carefully appraised in each individual case. He has arrived at the "negative conclusion" that the detection of colonic polypoid tumours beyond the range of the sigmoidoscope by systematic health checks of symptom-free and apparently healthy persons is of debatable value. Most clinicians will agree with him.

[1] *Surg., Gynec. & Obst.*, Volume 93, 1951, page 327.
[2] *Am. J. Surg.*, 1936, Volume 31, page 499.

CYANOSIS IN THE NEWBORN DUE TO MARKING INK.

ATTENTION has been drawn from time to time to the possibility of aniline dye being absorbed through the delicate skin of infants in quantity sufficient to cause cyanosis. It is known that methæmoglobinæmia may be produced in the newborn in this way, and these pages have in the past contained references to this. A concise article has been published by I. F. MacMath and John Apley dealing with the subject, in which the authors point out that cyanosis in the newborn is alarming, since its cause may be one of many internal disorders or congenital abnormalities.[1] When the condition affects several babies in a nursery it is evidently due to absorption, probably of toxic nature; this must be heeded, as serious results and even death may occur. The authors noted deep cyanosis in three babies, and slight cyanosis in three others. All these infants were otherwise healthy, and the blue colour disappeared without the occurrence of further symptoms. There was no sign of respiratory trouble in any of the children, though this has been a not uncommon event in babies adversely affected.

The cause of this outbreak was simply an increase in the baby population of the maternity hospital, and shortage of napkins a few days before the second series of cases led to their being used without preliminary washing. Each diaper bore the newly stamped name of the unit, an imposing array of 36 letters each a quarter of an inch high. The makers labelled the bottle "No precautions whatever need be taken", though the ink contained aniline and induline. The nature of the cyanosis was soon clear, as it followed the appearance of blue stains on the buttocks and thighs of some of the babies, and it failed to respond to oxygen. MacMath and Apley state that oxygen is without effect on the methæmoglobin, but it may have some therapeutic value if respiratory infection supervenes. Ascorbic acid and methylene blue have been recommended, but the babies in this series recovered spontaneously. A combination of circumstances brought about absorption of aniline through the skin of these little patients, up to the point where methæmoglobinæmia appeared. The authors remark that the best treatment is preventive; therefore they recommend that diapers after being marked with ink be always boiled before use, or, preferably, that they be marked by stitching on initials made with dye-fast material.

A PROGRESS REPORT ON BODY ARMOUR.

TOWARDS the end of World War II, the United States Armed Forces had made some practical progress in the development of body armour for the use of troops in the field, but it had not been tried out in battle. Early in the Korean War, trials were made of a thoraco-abdominal vest constructed of nylon and compressed fibre glass and weighing less than eight pounds. In a preliminary report on this, Lieutenant-Colonel R. H. Holmes[2] stated that after a field trial of two months' duration the vest was found to be desirable and acceptable and could be worn without undue encumbrance or hindrance. The psychological effect was also favourable. In a comment on this preliminary report at the time[3] we stressed the fact that the viewpoint of the men who had to wear the armour was of the utmost

[1] *Lancet*, October 30, 1954.
[2] *J.A.M.A.*, September 13, 1952.
[3] M. J. AUSTRALIA, February 28, 1953.

importance, particularly in relation to weight and convenience. In this regard, a more recent report by Holmes and Captain James M. Beyer[1] states that army missions in 1951 and 1952 determined beyond doubt that the field soldier could wear, would wear and desired to wear the body armour afforded him. Subsequently, body armour has become standard equipment for both army and marine corps field forces and has been used by large numbers of troops under combat conditions for a significant period. It is believed that the value of the armoured vest in the total medical effort to conserve the fighting strength of field forces has been demonstrated. Vests in recent use by the army have been made entirely of nylon. They weigh about eight pounds and are stated to provide a high degree of protection against shell fragments and some degree of protection against small arms fire, depending on the angle of incidence of the bullet and the range. Bullets hitting at acute angles and/or reduced velocities occurring at the terminus of flight are frequently defeated by the vests. In other instances, the severity of wounds is significantly reduced even though the vest is perforated. As might be expected, a relative increase has occurred in the percentage of head wounds, neck wounds and severe wounds of the extremities. Experience has shown that two out of every three missiles hitting the vests have failed to produce a wound. Because of the probability of multiple wounds, this, as Holmes and Beyer point out, does not necessarily mean that a casualty or a fatality was prevented, but it does mean that there was an absolute reduction in the number of wounds, any one of which conceivably could have been fatal or disabling. There is also an actual reduction in total casualty incidence, this reduction being of approximately the same magnitude for both men killed in action and men wounded in action. The body armour in current use was designed primarily for the reduction of the number of men killed in action on the battlefield. Any reduction of the number wounded in action is, of course, all to the good. The use of such an armour is, and always will be, a compromise between the maximum protection desired and the weight load that can be carried without the lowering of combat efficiency. Vital anatomical regions, such as the head, thorax and abdomen, must assume unquestioned priority in protection. Improvement of design and search for new materials providing maximum protection with minimum weight are receiving constant attention. Holmes and Beyer point out that in addition to the prevention of wounds and reduction in severity of wounds to the thorax and abdomen, a valuable psychological adjunct has accrued from the introduction of body armour in terms of improved soldier morale, for greater confidence in personal safety increases aggressiveness in combat. It is interesting also to note that the use of body armour is considered likely to be of real value in relation to civilian casualties in wartime.

PAINLESS MYOCARDIAL INFARCTION.

IT is curious to reflect that the syndrome of coronary occlusion did not come into the currency of practice until Herrick's description reached the every-day clinical world in 1812. Vast technical advances have been made, and electrocardiographic records form an integral part of even simple bedside inquiry. Fortunately research has also proceeded without complicating the picture too much. Of course, over-simplification is still a risk, and dogmatic interpretations of a graph are not unknown. One clinical type of coronary accident is worth further reference even today, that which is unaccompanied by pain. Melvin D. Roseman, in analysing a series of 200 cases of painless or almost painless occlusions, points out[2] that Herrick described this type of case in his original paper, and in 1928 Parkinson and Bedford reemphasized the same phenomenon. The two last-mentioned writers went farther still, and showed that pain might not merely be absent, but might be overshadowed by dyspnœa. This was more likely to occur if the patient had suffered from cardiac failure before his occlusive attack. The importance of this observation has been great; perhaps it may be again brought forward as still significant.

About the time of general spread of familiarity with coronary emergencies clinical writers drew attention to principles concerning symptoms and their meaning. Libman and others pointed out that only one bodily experience could occupy the field of consciousness at one time, provided the sensory disturbance was important. If we apply this to coronary occlusion it can easily be seen that the existence of a really severe phenomenon such as dyspnœa might hide the coexistence of the acute warning of pain. Roseman in his analysis reviews the literature on the subject, and collects the reports of 24 separate investigators, based on a large total of cases. His own series contained 200 cases, reviewed from the literature, and the numbers in other series varied from 19 to 500. In these series the findings varied considerably, as might be expected, since one of the chief items examined was subjective in nature. Roseman, in going over the assembled results, felt that great confusion existed in attempts to assess the significance or even the existence of pain in myocardial infarction. His own series was carefully studied from the records of the Boston City Hospital. Most of the patients were in the age-group fifty-one to seventy years, and there were 163 men and 57 women. Ten out of 220 patients had no pain during the course of an attack of myocardial infarction. Roseman had difficulty in deciding whether these patients suffered from actual pain or some degree of discomfort. He thought, too, that some of them belonged to the hyposensitive group described by Libman, in which substitution symptoms might occur. The list of descriptive terms used by the patients in explaining their symptoms is somewhat vague, but this will be no novelty to those who practise medicine.

Roseman finally concludes that painless occlusion does occur, that for the sake of consistent analysis discomfort should be classed as pain, but that the absence of pain is rare. Certain earlier studies on the subject appear to have exaggerated the frequency of the painless attack, but the author states that the most common symptom in painless myocardial infarction is dyspnœa. Bearing this in mind might help to establish the importance of relevant symptoms in clinical diagnosis. Perhaps a more detailed review of cases might be made, including a greater degree of laboratory investigation, for the exact pathological diagnosis is worth achieving in a disease so rife as this.

THE TREATMENT OF EARLY WHOOPING-COUGH.

WHOOPING-COUGH is still a disappointing malady from the point of view of treatment. Certainly there are several adjuvant methods which have some protective power or lessen its impact, and the fantastic remedies of a generation back are now, in the main, curiosities. The Medical Research Council last year pronounced chloramphenicol as of value in early treatment, that is, during the first week of illness, and a working party has now published its results with chloramphenicol palmitate used as soon as the earliest symptoms of pertussis could be detected. David Morris and W. C. Cockburn present a group of 55 children who have been subjects of the inquiry.[1] The trial group was made up of 28 treated children and 27 controls. Five were later excluded from the former group because of intolerance, lack of cooperation and faulty records. In all, 50 children were analysed. A difficulty which suggests itself at once was the problem of obtaining patients as early as was desired. The average interval was six days between onset and treatment in the control group and five days in the treated group, and the results were assessed by analysing the number and severity of the paroxysms.

[1] *J.A.M.A.*, August 21, 1954.
[2] *Ann. Int. Med.*, July, 1954.

[1] *Lancet*, October 9, 1954.

Results previously published by the Medical Research Council showed that fewer paroxysms were observed in the treated than in the control group, and the authors think that the consistency of the results offsets their small number. The severity of the spasms was recorded by the nurse-investigator and the mother as being absent, mild, moderate or severe, and these figures were collected over four-day intervals. Some cases were classed as "complicated", defined as those in which developed a complication which warranted the use of special antibiotics or sulphonamides. Three were noted, one in the treated group and two in the controls. Swabbings were used in attempts to isolate the *Hæmophilus pertussis* before and during treatment. Isolation appeared to be more difficult in the treated group.

In discussing the results, the authors pointed out the existence of an epidemic at the time; they thought that in spite of all efforts the interval elapsing before treatment could be begun was too long for the assessment of results in really early cases. They admit, too, that care is essential in the use of chloramphenicol palmitate in young children whose age never exceeded four years. The doses of the drug used in this inquiry ranged from 1·0 gramme chloramphenicol per day for children aged 0 to eleven months, 1·5 grammes for children of twelve to thirty-five months, and 2·0 grammes daily for children of thirty-six to fifty-nine months. Each child was observed for fifty-eight days from the start of treatment. The control group of children were given a suspension prepared by the makers. It contained none of the drug, and none of the observers knew what was being administered until the series was complete.

The serious nature of whooping-cough warrants such therapeutic experiments, but the authors admit that as the drug appeared to be of limited value only in their series, and as it is known to produce occasional untoward sequelæ, it should not be used as a routine. Modern research has given us many new drugs and methods, but their administration may carry with it hazards which cannot be lightly accepted. However, therapeutic control is becoming stricter, and more of these careful investigations should be carried out to help in the appraisal of new remedies for old diseases.

THE TRAINING OF ALIEN MEDICAL PRACTITIONERS IN HOSPITALS IN THE UNITED STATES.

A SHORT REPORT which should be of interest to medical practitioners in Australia on the number of alien practitioners undergoing training in the United States has recently been made by H. S. Diehl, E. L. Crosby and P. K. Katezel.[1] These authors point out that in the past few years there has been a great increase in the number of alien practitioners on the house staffs of hospitals in the United States. The temporary immigration of alien practitioners for the purpose of taking training was facilitated by the passing of the United States *Information and Educational Exchange Act* of 1948. This Act became effective in July, 1949. Since that time, hospitals have been authorized to offer internships and residencies to alien practitioners after they (the hospitals) secured approval of their educational programmes by the Department of State. Approvals have now been given to about 800 hospitals. In July, 1953, a total of 5589 alien practitioners held appointments as internes, residents or fellows on house staffs at civilian hospitals; this was the beginning of the 1953-1954 training year. Three years earlier the total was 2072. Of the July, 1953, total, 1787, or about one-third, were first-year internes and the remaining two-thirds (3802) were residents or fellows. Alien practitioners represented 22% of the total house staffs at approved civilian hospitals. Apparently, these alien practitioners are being of great service to hospitals, for we read that without the use of alien practitioners, hospitals would have a considerably greater proportion of unfilled positions than the present 20% for residencies and 30% for internships. Many young practitioners, who would normally be undergoing post-graduate medical education, are on active military duty. For the most part, the alien practitioners are receiving their training in general hospitals which have no major teaching affiliations. Over 60% of all alien internes and residents were in non-teaching general hospitals. Alien practitioners were found to be concentrated in tuberculosis hospitals, where they accounted for almost one-half of the house staffs. They comprised over one-quarter of the house staffs of the general non-teaching hospitals, and almost one-quarter of the staffs of mental hospitals; however, they represented a much smaller proportion of the staffs of teaching hospitals—an average of 12%. The typical alien house staff member was about two years older than his citizen counterpart—for the training year 1953-1954 the medium age was twenty-nine years for alien first-year internes, as compared to twenty-six for the citizen interne. Among residents and fellows the medium age for both citizens and aliens was twenty-eight years. The subjects studied by these alien practitioners are of interest. The largest number studied surgery; they represented 18% of all surgical residents. Aliens constituted a smaller proportion of residents on internal medicine (15%), radiology (16%) and pædiatrics (16%). They represent a larger proportion of the residents on pulmonary disease (41%), general practice (38%) and pathology and anæsthesiology (each 29%).

[1] *J.A.M.A.*, September 4, 1954.

THE SURGICAL TREATMENT OF OCCLUSIVE DISEASE OF THE AORTA.

As a result of the wider use of aortography, it is realized that thrombo-obliterative disease of the terminal part of the aorta (Leriche's syndrome) is more common than previously thought. Until recently, treatment was merely palliative and consisted of lumbar sympathectomy combined occasionally with resection of the involved segment. Thrombo-endarterectomy was then practised by E. Wylie,[1] but, as M. DeBakey, O. Creech and D. Cooley were not satisfied with the results of this procedure in their hands,[2] they now extirpate the diseased segment and restore continuity by a lyophilized aortic homograft. On the basis of their results in a short series of cases, they conclude that this is the ideal treatment for occlusive arterial disease limited to the terminal part of the aorta and its bifurcation. Clinical results up to four years are known with no apparent deterioration of the graft. DeBakey has examined a homograft one year after its insertion and found that though some fibrous tissue replacement was present, there was no evidence of retrogressive changes such as calcification or arteriosclerosis. These results may be contrasted with the use of heterologous arterial grafts, which quickly weakened, dilated and became thrombosed, described by O. Creech, M. DeBakey, M. Self and B. Halpert.[3]

A new approach to the problem of replacement of the diseased aorta is made by A. H. Blakemore and A. B. Vourhees,[4] who have introduced the use of tubes constructed from a plastic, Vinyon "N", cloth to bridge arterial defects. Replacement of arteriosclerotic abdominal aortic aneurysms by this prosthesis was followed by gratifying functional results, though the longest follow-up period was only ten months. Should this method be successful, it can easily be seen how more advantageous it will be over that of the homograft with its problems of collection, sterilization and storage. However, one must always view the presence of plastic substances in the human body with reserve until their worth is proved over a sufficient length of time, in view of the unfortunate experiences which too often occur in the use of other allegedly inert plastics, such as nylon weave.

[1] *Surgery*, 1952, 32: 275.
[2] *Ann. Surg.*, September, 1954.
[3] *Surgery*, September, 1954.
[4] *Ann. Surg.*, September, 1954.

XUM

Abstracts from Medical Literature.

OBSTETRICS AND GYNÆCOLOGY.

Ectopic Pregnancy.

C. GORDON JOHNSON AND LEWIS I. POST (*Surg., Gynec. & Obst.*, April, 1954) report a greatly increased incidence of ectopic pregnancies (254) in the period from January, 1951, to July 1, 1953, at the Charity Hospital of Louisiana in New Orleans. They state that this increase was not due to a larger number of hospital admissions. The use of sulphonamides and antibiotics has not prevented or controlled acute pelvic infections and their sequelæ; and the authors believe that, whilst beforehand many patients would have developed complete occlusion of the tubes, now infection is controlled before complete occlusion occurs. Fertility remains, but is associated with intratubal and peritoneal adhesions with resultant tubal implantation. The time factor in starting treatment of acute salpingitis is important; to avoid tubal closure treatment with antibiotics must be commenced before suppuration occurs, which is usually about the fifth to the seventh day. Culdocentesis, or the introduction of an 18-gauge spinal needle through the posterior fornix into the cul-de-sac and aspiration of its contents with a 50-millilitre syringe, has proved to be a valuable diagnostic procedure. When the diagnosis is made, immediate operation is indicated, no matter what the condition of the patient, and blood transfusions are given if indicated. As a general rule no surgical procedure is carried out except what which is necessary to control the bleeding. General anæsthesia is the agent of choice, and ethylene or ether is preferred. In the last consecutive 254 cases of ectopic pregnancy there have been no fatalities.

Primary Carcinoma of the Vagina.

G. W. DOUGLAS (*Surg., Gynec. & Obst.*, April, 1954) presents a study of the gross and microscopic pathology from eight cases of carcinoma of the vagina. The incidence of the disease in a gynæcological department was 0·04%, and the ratio of vaginal to cervical carcinoma was 1 : 67. Three gross types are described: (i) The everting type, which is usually present on the posterior wall, seldom shows lateral growth and may reach considerable size without deep invasion. Microscopically these are usually well differentiated papillomatous growths. (ii) The infiltrating form, which only appeared on the anterior wall in this series and is anaplastic and poorly differentiated with considerable lateral spread and little growth into the vaginal lumen. (iii) The surface carcinoma, which is largely confined to the mucous membrane with considerable lateral growth and little invasion. Its extent is difficult to judge on clinical examination. The tumours are rapidly growing and may reach large size without producing symptoms. In four of the eight cases, the tumour extended beyond the described vaginal limits by surface or subepithelial lateral spread. Parametrial and pelvic lymph node involvement was not found in this series, and the author suggests that in cases with thickening of the recto-vaginal septum or parametrium, inflammatory induration should be suspected. Tumours of the posterior vaginal wall can reach a considerable size without involvement of the recto-vaginal septum or penetration of the rectal wall. The author is of the opinion that every patient with this disease should be considered as a candidate for radical surgery before radiation therapy is resorted to. Total colpectomy by combined vaginal and abdominal dissection with removal of the uterus, adnexa and parametrium and block dissection of the pelvic glands is recommended. If less than total colpectomy is planned, extensive pre-operative biopsies should be carried out to determine the lower limit of the lesion.

Stress Incontinence.

CARL GOETSCH (*Western J. Surg.*, April, 1954) reports on seven cases of stress incontinence and cystocele, complicated by a condition requiring abdominal hysterectomy. After closure of the peritoneal cavity, the neck of the bladder and urethra are exposed through the preperitoneal space, and vesico-urethral suspension is carried out by the procedure described by Marchetti, in which sutures are placed lateral to the urethra. Post-operatively the vaginal examination reveals a most satisfactory restoration of the contour of the anterior vaginal wall beneath the urethra and bladder neck, which instead of bulging down now hugs the posterior aspect of the symphysis. The results in all seven cases were satisfactory.

Lower Urinary Tract Fistulas in Women.

NORMAN F. MILLER AND HARRY GEORGE (*Am. J. Obst. & Gynec.*, July, 1954) discuss the causes, varieties and principles of treatment of lower urinary tract fistulas in women in a study based on 292 cases. Of the cases 14% were due to birth trauma, 34% complicated pelvic carcinoma, and 45% followed pelvic surgery. The 292 fistulas comprised 235 vesico-vaginal fistulas, 36 urethro-vaginal fistulas and 21 uretero-vaginal fistulas. The authors observe that the widespread observance of good ante-natal care and sound obstetrical practice have practically eliminated the risk of fistula complicating childbirth. Fistula complicating pelvic cancer is usually due to neoplastic invasion of the base of the bladder, even when it makes its first appearance after irradiation therapy. Avascular necrosis following irradiation therapy, however, can result in vesico-vaginal fistula. Fistulas following pelvic surgery occurred after hysterectomy (abdominal and vaginal) in 73% of cases, and after vaginal operations other than vaginal hysterectomy in 19% of cases. The authors consider that fistulas following pelvic surgery may be caused by unrecognized direct injury to the bladder, urethra or ureter through faulty bladder mobilization or excessive retraction. Late fistulas after operation or childbirth are due to avascular necrosis following sutures, ligatures, prolonged retraction or clamping. Impairment of the blood supply of the ureter may follow extensive dissection and mobilization of the ureter during radical dissection of the pelvis. Superfluous sutures and excessive tension on sutures in vaginal plastic surgery are considered by the authors to be contributary factors in the causation of avascular necrosis. Principles of treatment directed towards the prevention of fistulas in obstetrical practice, vaginal plastic surgery and abdominal pelvic surgery are summarized and listed by the authors. They state that reimplantation of the lower end of the ureter into the bladder is the logical treatment of uretero-vaginal fistula when possible. In view of the possibility that small post-partum and post-operative fistulas may undergo spontaneous cure, operative treatment should not be attempted before at least twelve weeks after their development. The authors stress the following principles of treatment in vesico-vaginal fistula: complete urological investigation before operation, adequate pre-operative care, good exposure at operation and careful post-operative nursing.

The Transverse Incision in Pelvic Surgery.

DONALD G. TOLLEFSON AND KEITH P. RUSSELL (*Am. J. Obst. & Gynec.*, July, 1954) discuss the advantages of the transverse incision in routine pelvic surgery. They describe and illustrate the technique of this incision and quote their personal experience with 621 patients. They state that the favoured mid-line incision is probably used more by custom than by reason. They list the following advantages of the vertical midline incision: it is easy to make and to close; it can be readily extended upward; there is little associated bleeding. Various anatomical and physiological considerations, supported by their surgical experience, have influenced the authors towards preference of the transverse lower abdominal incision. They consider that the rectus sheath is not a vertical fascial structure but is formed by the transverse fibres of the three flat muscles of the abdominal wall passing to their insertion in the *linea alba*. The rectus muscles are segmental muscles with a segmental nerve supply. The presence of transverse tendinous intersections permits minimal retraction of muscle fibres, and suturing of the transversely cut rectus muscle is unnecessary. Healing of the muscle occurs with the formation of a transverse band of fibrous tissue, which functions as an additional tendinous intersection. The authors state that there are less risks of wound disruption and incisional hernia with the transverse incision. Also, there is less interference with breathing, movement in bed and early ambulation. Exposure of the pelvic organs is better with the transverse incision, strong retraction is unnecessary and the resulting scar is strong and less painful. The incision as described by the authors passes across the abdomen at the junction of the lower and middle

thirds of a line joining the symphysis and umbilicus. Hæmostasis is secured by electrocoagulation. The abdominal fascia is incised transversely to the lateral border of each rectus muscle. The rectus muscle on either side is freed from its bed by blunt finger dissection, and each rectus muscle is incised transversely. The peritoneum is then opened transversely. Closure of the incision is facilitated by the natural tendency of the wound edges to fall together. The peritoneum is closed with a continuous fine chromic suture. No approximation of the rectus muscle is attempted. The fascia is closed with interrupted sutures of stainless steel wire.

Benign Trophoblastic Lesions.

EMIL NOVAK AND C. S. SEAH (*Am. J. Obst & Gynec.*, July, 1954) report a study of 120 cases of benign hydatidiform mole, 34 cases of *chorioadenoma destruens* and 27 cases of syncytial endometritis in the Mathieu Memorial Chorionepithelioma Registry. They state that malignancy as it occurs in trophoblastic lesions is determined by the microscope and not by the clinical course. Eighty-five non-malignant lesions had been incorrectly diagnosed as choriocarcinoma, and the reasons for incorrect diagnoses are discussed. Nulliparity or a low degree of parity were features of the patients with benign hydatidiform mole. Bleeding at about the third or fourth month of pregnancy associated with a disproportionately enlarged uterus was a common initial finding. Diagnostic aids included inability to palpate fœtal parts, negative X-ray findings and spontaneous expulsion of vesicles. Biological tests were helpful, and the authors consider that the results of pregnancy tests should become negative, as a rule, within two months of the evacuation of a mole. The main pathological changes in hydatidiform mole are stated to be trophoblastic proliferation, œdema of stromal cells and absence of blood vessels. Nothing in the macroscopic or microscopic appearances of extruded or curetted molar tissue indicates whether the course of a particular mole will be benign or malignant. In the series of 120 hydatidiform moles 99 were evacuated vaginally, 11 by abdominal hysterotomy and eight by hysterectomy. Forty-one of the patients not treated by hysterectomy ultimately underwent this operation. The authors outline the following general plan for the management of hydatidiform mole. The mole should be removed vaginally with ovum forceps and careful uterine curettage performed four or five days later. If there is no recurrence of hæmorrhage, if the uterus involutes normally and if the results of pregnancy tests become negative within two months, the danger of malignancy is over. If bleeding and subinvolution continue, a second operation of dilatation and curettage is advisable. If symptoms persist after this, hysterectomy is indicated. There were 34 cases of *chorioadenoma destruens* in the series characterized by an inordinate degree of trophoblastic overgrowth and undue penetration of the trophoblastic elements. The authors discuss the differentiation of *chorioadenoma destruens* from benign hydatidiform mole and malignant choriocarcinoma. There were 27 cases of syncytial endometritis in the series. The authors consider that this is not a neoplasm but a residuum of trophoblastic cells following a normal pregnancy, abortion or mole.

The Treatment of Female Sterility.

I. C. RUBIN (*Am. J. Obst. & Gynec.*, July, 1954) discusses the progress in treatment of female sterility during the past forty years. He states that progress has been largely due to new concepts of pathogenesis and a better understanding of the basic physiology and endocrinology concerned. Rational and simple investigations have superseded numerous set operations such as dilatation and curettage, plastic operations on the cervix and operations to alter the position of the uterus. The influence of psychogenic factors and the relation of diseases of other organs to genital impairment is now appreciated. The modern treatment of vulvitis, vaginitis, acute and chronic cervicitis and endocervicitis is an advancement in the prevention of sterility. Thick cervical mucus and scanty cervical secretion can be favourably influenced for sperm migration by the administration of œstrogens. Hysterography permits of an accurate assessment of the size and shape of the uterine cavity and aids in the diagnosis of malformation, polypi, submucous fibroid tumours and endometrial tuberculosis. The operation of myomectomy has undergone great technical improvement, is now a safe operation and is followed by successful pregnancy in 30% to 50% of cases. The greatest advance in the treatment of sterility has been made in the diagnosis of the patency or non-patency of the Fallopian tubes. The very methods of diagnosing tubal patency either by utero-tubal insufflation or by hysterosalpingography have been of therapeutic value in over 20% of cases. Plastic reconstructive operations on the tubes, which were formerly thought hopeless, are now successful in up to 20% of cases. Sterility due to tuberculous salpingitis and tuberculous endometritis can now be more readily diagnosed, and some patients have been successfully treated with streptomycin and PAS. The use of male hormones and conservative surgery, when necessary, has permitted pregnancy in some patients with endometriosis. Functional menometrorrhagia of young adults is now treated successfully by endocrine therapy. Certain cases of sterility associated with amenorrhœa respond to treatment by gonadotropin and œstrogen, and even better results have followed fractional-dose X-ray irradiation of the ovaries and pituitary gland. The author considers that if 80% of the causes of female sterility can be determined, there is much work to be done to discover the remaining deficit.

Intraabdominal Rupture of Pelvic Abscesses.

JACK VERMEEREN AND RICHARD W. TE LINDE (*Am. J. Obst. & Gynec.*, July, 1954) review cases of intraabdominal rupture of pelvic abscesses at Johns Hopkins Hospital from 1925 to 1953. These are assessed in two groups: the first group included 22 patients treated from 1925 to 1944, and the second group comprised 25 patients treated from 1945 to 1953. In the second group of patients more active surgical treatment was introduced, and patients had the advantages of modern antishock therapy and the antibiotics. The reduction in mortality from 90% in the first group to 12% in the second group is discussed. The authors review the literature of the subject, discuss the symptoms and signs of acute rupture of pelvic abscess and outline the surgical treatment of this complication. There was a high incidence of rupture of pelvic abscess among Negro women (92% of the series). The underlying pathological state in most cases was gonococcal pelvic inflammatory disease. Early surgical intervention has resulted in a definite lowering of mortality rate ranging from 18% for cases in which treatment was carried out inside twelve hours to 73% after forty-eight hours. The authors found that simple abdominal drainage carried a high mortality. They state that ruptured pelvic abscess, as a rule, occurs after repeated infections, and the uterine tubes are the usual source of infection. The performance of pelvic examination probably precipitated rupture of a pelvic abscess in four of the 25 cases in the second group. The outstanding symptoms of ruptured pelvic abscess are listed as suddenly increased lower abdominal pain which spreads over the abdomen, nausea and vomiting associated with abdominal distension and fever. The characteristic signs are those of generalized peritonitis with a palpable pelvic mass. Prophylactic treatment is chiefly directed towards the conservative treatment of acute pelvic inflammation in hospital. If a localized abscess forms, it is drained by colpotomy. Pre-operative treatment usually commences by blood transfusion and the giving of antibiotics. An indwelling catheter and Miller-Abbott tube are usually passed before operation. The operation of choice is removal of the free pus and the abscess together with the uterus, tubes and usually the ovaries. Subtotal hysterectomy is recommended for patients with this acute complication. Operation is followed by continued therapy directed against shock, infection, ileus and fluid balance.

Birth-Weight and the History of Breast Feeding.

J. W. B. DOUGLAS (*Lancet*, October 2, 1954) produces evidence to show that women who are successful in breast feeding one child are less likely to have subsequent children of low birth-weight (less than six pounds) than are those who were unsuccessful in feeding their previous child. He states that this relationship is highly significant and persists after making allowances for the differences in age, employment and social group of the successful and unsuccessful breast feeders. It also persists after the exclusion of all women with a history of premature delivery. No significant difference was noted in the birth-weights of babies of women who weaned their babies early because of milk failure and those with plenty of milk who weaned their babies for other reasons.

XUM

Medical Societies.

MEDICAL SCIENCES CLUB OF SOUTH AUSTRALIA.

A MEETING of the Medical Sciences Club of South Australia was held on November 5, 1954, at the Anatomy Theatre, New Medical School, University of Adelaide.

Morphological and Biochemical Changes in Yeast Cells Caused by Freezing.

MR. I. A. HANSEN discussed morphological and biochemical changes in yeast cells caused by freezing. He said that mechanical disintegration was often used to overcome permeability problems which arose in the study of whole cells. Until recently, that method was unsuccessful with yeast cells, as the severe treatment required to break the tough cell wall also destroyed respiratory activity. Hence, workers had often used the device of freezing yeast cells in liquid nitrogen or solid carbon dioxide to increase permeability to Krebs-cycle acids. Results with frozen cells had then been used to deduce the mechanism of acetate oxidation in normal cells. It was thought that damage to the enzymic structure of the cells resulting from freezing might explain why acetate did not appear to be oxidized via the tricarboxylic acid cycle. Further doubt had been cast on results of acetate and succinate oxidation obtained by Krebs by the observation that commercial baker's yeasts differed in their behaviour upon freezing. When frozen cells were washed, considerable amounts of carbohydrate, protein, amino acids, salts and coenzymes diffused out. The total amount of material removed in that way was about 20% of the original dry weight of the cells. Washed cells showed no ethanol or malic dehydrogenase activity without the addition of DPN. The distributions of several enzymes between the granules and supernatant of cell-free yeast extracts were reported earlier. In a comparison between cell-free extracts of fresh and frozen cells, the latter tended to resemble extracts of fresh cells made by prolonged disintegration—in other words, several enzymes were further solubilized, coenzyme dependence was greatly increased, and certain postulated reoxidizing systems appeared to be uncoupled. Those effects were very pronounced if granules from fresh cells were frozen. The results indicated that carbon dioxide frozen cells could not be regarded as normal cells with the permeability barrier removed. Deductions on that assumption—for example, that acetate was not oxidized via the tricarboxylic acid cycle in normal cells—might well be inaccurate. In fact, subsequent work suggested that that was the pathway of acetate metabolism.

Arabidopsis Thaliana, a Plant for Experiments under Aseptic Conditions.

MR. J. LANGRIDGE discussed *Arabidopsis thaliana*, which he said was a small crucifer with a short life-cycle (twenty-eight days), a low chromosome number ($n = 5$), and a high seed output. In culture the plants grew well on five millilitres of agar in ordinary test tubes and flowered thirteen to fourteen days after germination. Seeds were sterilized in a solution of hydrogen peroxide and ethanol and transferred to the agar medium with a platinum loop. The agar, at 0·6% concentration, contained only the minerals of Knop solution and chelated trace elements. A uniform germination was secured by a twenty-four-hour cold treatment, and the plants were then grown in a chamber at 25° C. with light at 1000 foot candles. Plants might be grown on a large scale in Petri dishes containing pure cellulose and mineral nutrients. Contamination was avoided by packing the space about the Petri dish lid with cotton-wool pretreated with cetyl-pyridinium chloride. The inner surface of the Petri dish lid was treated with "Anti-dim" to prevent water condensing in large drops and reducing the available light. Fifty plants might be grown to maturity in each Petri dish.

Mr. Langridge said that the primary aim in developing those methods had been to obtain mutation affecting plant development and metabolism. The required mutations were induced by X irradiation and isolated by growing the segregating generations on sterile, chemically defined medium. Three mutations which affected the formation of plastids from proplastids had been obtained. The effects of those mutations were not confined to an inactivation of the photosynthetic apparatus, for the plants showed no growth response to added sucrose. The formation of chlorophyll was prevented in another mutant, but deficient plants would grow and flower if sucrose was supplied in the medium.

One recessive lethal mutation rendered the plant incapable of synthesizing thiamine. The mutant was low in chlorophyll and died at the two-leaf stage unless thiamine was supplied. The genetic block prevented the coupling of derivatives of pyramidine and thiazole to form the thiamine molecule. Other mutations of a physiological nature strongly depressed growth rate, prevented the formation of floral primordia, or resulted in non-functional gametes.

A rare type of mutation produced a gigas plant characterized by a net assimilation rate significantly higher than in the wild type.

The relative lack of mutations of the "Neurospora" type probably reflected a necessity for unimpaired synthetic abilities in the endosperm and embryo for seed development. The biochemical genetics of flowering plants was thus likely to be very different from that of the microorganisms.

AUSTRALIAN LAENNEC SOCIETY (SOUTH AUSTRALIAN BRANCH).

THE South Australian Branch of the Australian Laennec Society, which constitutes the medical section of the South Australian Tuberculosis Association, was formed at a meeting held in Adelaide on October 29, 1954. Sir Henry Simpson Newland, President of the South Australian Tuberculosis Association, presided.

Officers and members of Council elected were as follows:

President: Dr. D. R. W. Cowan.

President-Elect: Mr. D'Arcy Sutherland.

Honorary Secretary-Treasurer: Dr. R. Munro Ford.

Members: Dr. F. R. Hone, Dr. P. S. Woodruff, Dr. H. R. Gilmore, Dr. John Barker, Dr. P. S. Jay, Dr. Richard Burnard.

The Society has had its first council meeting at which three subcommittees were formed—namely, (i) membership, (ii) scientific, and (iii) educational.

The objects of the Society are, briefly, the study and dissemination of knowledge of tuberculosis and thoracic disease. One particular object is to cooperate with other medical societies and associations interested in tuberculosis and thoracic diseases.

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

CHIRURGEONS.[1]

[From "The Englishman's Treasure", by Thomas Vicary, Sergt. Chirurgeon to Henry VIII.]

THEY must also be gracious and good to the poor and of the rich take liberally for both. And see they never praise themselves for that redoundeth more to their shame and discredit than to their fame and worship. For a cunning and skilful Chirurgeon need never vaunt of his doings for his work will ever get him credit enough. Likewise that they despise no other Chirurgeon without a great cause for it is meet that one Chirurgeon should love another as Christ loveth us all.

Correspondence.

PROBLEMS WHICH SURGEONS CREATE FOR ANÆSTHETISTS.

SIR: Dr. S. V. Marshall's article of December 4, 1954, reminds me of any small boy's efforts to be taken notice of. Surely the need for specialist anæsthetists is a minor one

[1] From the original in the Mitchell Library, Sydney.

in medicine. As a specialty, anæsthesia is poorly paid—an adequate comment as to its relative value. Like obstetrics, *90% involves no more than average skill. There are more* "specialist anæsthetists" than are necessary to deal with the remaining 10%. If a business concern fails, the answer is *to open a different business. There is no cry of "the world* owes me a living". I do not decry the consummate skill and artistry of that small, select band who control an *anæsthetic machine with the savoir-faire of an experienced* organist at a Bach festival. I do say, however, I have seen so-called "specialists" administer anæsthetics that *would practically put them out of practice (and I do mean* "practice") in any fair-sized country town. I protest I was misled by the title "Problems which Surgeons Create *for Anæsthetists". It read more like a workers' compensa*tion claim than a serious article of medical interest. I wonder who suffers most from (to use Dr. Marshall's words) *"deep-seated feelings of inadequacy".*

Yours, etc.,

B. M. DWYER.

Inverell,
New South Wales.
December 9, 1954.

Obituary.

WILLIAM THOMAS NELSON.

*WE have received from Dr. Victor H. Wallace the follow*ing appreciation of the late Dr. William Thomas Nelson.

The news of the death of Dr. W. T. Nelson on October 28 *at the age of fifty-nine years was a sad blow to his* numerous friends in many walk of life. William Thomas Nelson, who was born in South Australia, spent his boyhood *in New Zealand and graduated in medicine at the University* of Sydney in 1918. He became house surgeon to Sir Herbert Maitland at Sydney Hospital, where he met the gracious *and very competent young woman who was to be such a* wonderful help to him as his wife. The late Dr. Edna Nelson had great organizing ability and rendered valuable service to the community. It is a tragedy that, in many instances, *medical practitioners who do valuable work in the interests* of their fellow men and women become incapacitated by chronic illness or die prematurely. Dr. Tom Nelson and *his wife Edna are notable examples.*

Quite early in his career Tom showed a keen interest in industrial medicine, and he was determined to make him*self thoroughly competent in this important field.* He went to Broken Hill on the Silicosis Investigation Committee, after which he had experience of general practice in Sydney. *This latter work gave him that perspective which is an* essential prerequisite for every specialist. In 1922 he went to England, and in 1923 he obtained the M.R.C.P. (London). *After returning to Australia he joined the Commonwealth* Department of Health and studied for the M.D. (Sydney), which he obtained in 1926.

Tom was sent to Kalgoorlie to set up general patho*logical laboratories and X-ray facilities for the district, as well as a medical examination centre for the miners. In* an article, "Activities of the Commonwealth Health Laboratory, Kalgoorlie, Western Australia", published in *Health in 1927, he described the work being done. While in the* west he examined miners for silicosis and tuberculosis and reported his work in the Commonwealth Service Publication *(Division of Industrial Hygiene), 1928, "Report on an* Investigation of the Pulmonary Conditions of Mine Employees, Western Australia, during the Years 1925-26". *He later worked at the Commonwealth Serum Laboratories,* in Melbourne, where his desire for scientific investigation again found expression. With two colleagues he did some *work on "The Incidence of Punctate Basophilia", the report* being published in this journal in 1932.

Dr. Nelson was next appointed as medical officer to the *Department of Munitions, Melbourne.* This brought him into contact with workers from all parts of the city and suburbs. I have heard many reports of his popularity. He *was very approachable,* "a doctor with whom the men could make friends". Many of our patients are more nervous than we generally realize. Sometimes they tell us of their fears. Tom Nelson was extremely well liked, not only for his good work and his genial personality, but because he quickly put

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED DECEMBER 11, 1954.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.[2]	Australian Capital Territory.[2]	Australia.[3]
Acute Rheumatism	2	1(1)	4(2)	..	..	..	..	..	7
Amœbiasis	..	..	..	..	..	..	..	..	..
Ancylostomiasis	..	..	..	..	..	..	..	..	..
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	2(1)	..	..	..	..	..	..	..	2
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	7(3)	6(6)	8(7)	..	3(3)	..	..	..	24
Diphtheria	1	1(1)	..	..	4(1)	..	..	..	6
Dysentery (Bacillary)	..	2(2)	3(2)	..	3(3)	..	..	..	8
Encephalitis	..	..	..	1(1)	..	..	..	..	1
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	..	..	..	..	..	..	..	..
Infective Hepatitis	101(34)	47(33)	..	2(1)	3(3)	1	..	..	154
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	1	..	..	..	..	..	1
Leptospirosis	..	..	..	..	..	..	..	..	..
Malaria	..	..	..	..	..	..	..	..	..
Meningococcal Infection	..	..	1	1	..	..	..	..	2
Ophthalmia	..	..	..	..	4	..	..	..	4
Ornithosis	..	..	..	1	..	..	..	..	1
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	4(2)	10(4)	7(5)	5(4)	..	1	..	..	27
Puerperal Fever	..	1	..	..	..	..	..	..	1
Rubella	..	28(25)	..	4(1)	11(11)	..	..	..	43
Salmonella Infection	..	..	..	..	1(1)	..	..	..	1
Scarlet Fever	14(6)	..	12(2)	9(9)	3(2)	..	..	..	38
Smallpox	..	35(20)	..	..	..	..	..	..	35
Tetanus	..	..	..	..	..	..	..	..	..
Trachoma	..	..	..	..	13(1)	..	..	..	13
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	45(38)	21(19)	3	2(1)	14(12)	5(1)	..	..	90
Typhoid Fever	..	..	..	..	..	..	..	..	..
Typhus (Flea-, Mite- and Tick-borne)	..	..	..	..	1	..	..	..	1
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

[2] Figures not available.

[3] Figures incomplete owing to absence of returns from Northern Territory and Australian Capital Territo.y.

patients at their ease. At the munitions factory he introduced blood tests for the personnel engaged in working with T.N.T.

In 1935 Tom moved to Sydney, where he acted as medical referee in the industrial courts. He took up practice in Macquarie Street and gradually became recognized as a consultant in industrial diseases and disability evaluation. He was active in consultative work and was appointed as medical adviser to various industrial organizations. He reached the peak of his medical activity over this period. He was a member of most of the medical boards appointed by the Workers' Compensation Commission to examine applicants for a Certificate of Disablement for Pneumoconiosis in the coal industry. He was also a member of the Silicosis Compensation Board. In 1938 he became a Fellow of The Royal Australasian College of Physicians. His opinion on industrial diseases was greatly valued by his colleagues and highly respected in the courts. On one occasion he was called from Sydney to Perth to give expert evidence in a dispute concerning lead poisoning among paint workers.

Dr. W. T. Nelson was a keen student of the history of medicine. He loved reading Osler's "Æquanimitas", which he could quote freely. This book had a profound influence in forming his ideals. In fact, his philosophy of life can best be expressed in Osler's own words: "Loyalty to the best interests of the noblest of callings, and a profound belief in the gospel of the day's work." Such was Tom Nelson's creed during the forty-one years for which I knew him. He was a gentleman in the best sense of the term. He had a natural dignity, a clear and capable mind, a generous nature and a keen sense of humour. Though the four sons he has left behind will miss him most, there are countless others who will feel that they have lost a highly competent colleague, a delightful companion and a true friend.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

Annual Subscription Course.

THE Post-Graduate Committee in Medicine in the University of Sydney announces that the following lectures will be given during January, 1955.

Tuesday, January 18: Lecture by Dr. Irene A. Koeneke, M.D., M.A.C.S., on "Cancer of the Uterus: A Study of Diagnosis and Treatment in a Thirty-Seven Year Period at the Halstead Hospital, Halstead, Kansas" at 8.15 p.m. at a combined meeting of the Clinical Society of The Women's Hospital, Crown Street, Sydney.

Wednesday, January 19: Lecture by Dr. Frances H. Schiltz, M.D., M.A.C.P., on "Phases of Pancreatic Lesions with Presentation of Case Reports" at 12 noon in the Maitland Lecture Theatre, Sydney Hospital.

Dr. Irene A. Koeneke and Dr. Frances H. Schiltz are from Kansas, United States of America. They are United States committee members of the World Medical Association and will be in Sydney from January 16 to 20 *en route* to the Association meeting in the Philippines.

Wednesday, January 26: Lecture by Professor Andrew M. Claye, M.D., F.R.C.S., F.R.C.O.G., on "Conservative Operations on the Uterus and Ovary" at 8.15 p.m. in the Scot Skirving Lecture Theatre, Royal Prince Alfred Hospital.

Friday, January 28: Lecture by Professor Andrew M. Claye on "Fœtal Death in Utero" at 8.15 p.m. in the Stawell Hall, 145 Macquarie Street, Sydney.

Professor Claye is Professor of Obstetrics and Gynæcology in the University of Leeds and will be making a short visit to Sydney *en route* to New Zealand. Both lectures have been arranged in conjunction with the New South Wales Committee of the Royal College of Obstetricians and Gynæcologists.

The annual subscription course covers attendance at lectures by overseas visiting lecturers and other specially arranged activities. Annual fee is £2 2s. from July 1. Fee for resident medical officers is £1 1s. Occasionally last-minute alterations to meetings are necessary, and these are notified by advertisement in *The Sydney Morning Herald* (Public Lectures), if possible on the day before the meeting.

Australian Medical Board Proceedings.

TASMANIA.

THE following have been registered, pursuant to the provisions of the *Medical Act*, 1918, as duly qualified medical practitioners: King, William Stevenson, M.B., Ch.B. (Univ. St. Andrews), D.P.H. (Univ. St. Andrews), 1921; Helme, Alan Crichton, M.R.C.S., L.R.C.P. (London), 1952; Spence, Bruce Macallister, M.B., B.S., 1948 (Univ. Melbourne); Manea, Spero, M.B., B.S., 1952 (Univ. Adelaide); Hewson, Alan Donald, M.B., B.S., 1952 (Univ. Sydney).

Nominations and Elections.

THE undermentioned have been elected as members of the New South Wales Branch of the British Medical Association: Allman, John Gordon, M.B., B.S., 1954 (Univ. Sydney); Bull, Robert Russell, M.B., B.S., 1954 (Univ. Sydney); Hock, William John, M.B., B.S., 1953 (Univ. Sydney); O'Neill, Thomas Joseph, M.B., B.S., 1952 (Univ. Sydney); Atkinson, Leicester Albert, M.R.C.S. (England), 1940, L.R.C.P. (London), 1940.

Diary for the Month.

JAN. 11.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
JAN. 12.—Western Australian Branch, B.M.A.: Branch Council.
JAN. 14.—Queensland Branch, B.M.A.: Council Meeting.
JAN. 17.—Victorian Branch, B.M.A.: Finance Subcommittee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205 Saint George's Terrace, Perth): Norseman Hospital; all contract practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Tasmania: Part-time specialist appointments for the north-west coast of Tasmania.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

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